YOUR OFFICE PARTNER

INSTRUCTION HANDBOOK

ADVANCED

COLOUR PRINTER

CLP 3416

PLEASE READ THE INSTRUCTION HANDBOOK CAREFULLY BEFORE USING THIS MACHINE. KEEP IT CLOSE TO THE MACHINE FOR EASY REFERENCE.

UTAX Product Management 2004

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Introduction

This guide has the following chapters:

- **1 Handling Paper**

  Explains how choose, handle and load paper.

- **2 Using the Operator Panel**

  Explains how to use the operator panel to configure the printer.

- **3 Options**

  Shows the available options.

- **4 Computer Interface**

  Describes the possible connections between the printer and your computer.

- **Glossary**

  A Glossary of terms used is provided here.

Guides Included

The following guides are included with this machine. Refer to the guide that corresponds to your particular objective.

Basic Operation Guide

The *Basic Operation Guide* contains procedural steps for initial installation and set up of the machine, and connection to a computer. It also includes basic procedures for using the printer and has *Maintenance* and *Troubleshooting* sections.

Advanced Operation Guide (this guide)

The *Advanced Operation Guide* contains explanations on handling paper, setting the default settings that can be adjusted on the machine. It also includes descriptions of the available options and the computer interface to the printer. This guide is stored on the CD-ROM as a PDF document.

KX Printer Driver Operation Guide

Describes how to install and set up the printer driver. This guide is stored on the CD-ROM as a PDF document.

Technical Reference for PRESCRIBE Commands

PRESCRIBE is the native language of the Kyocera printers. This *Technical Reference* contains information about how printing is performed using the *PRESCRIBE* commands, as well as a font and emulation description. This guide is stored on the CD-ROM as a PDF document.

Command Reference for PRESCRIBE commands

Gives a detailed explanation of the *PRESCRIBE* command syntax and parameters, with the aid of print examples. This guide is stored on the CD-ROM as a PDF document.

Conventions

This manual uses the following conventions:

Convention	Description	Example
Italic Typeface	Used to emphasise a key word, phrase or message. In addition, references to other publications are displayed in italic typeface.	A *Completed* message displays and the *Copy Basic* screen returns.
Bracket Bold Text Typeface	Used to emphasise the selection of a feature mode or key.	Press **[Copy]**.
Notes	Used to provide additional or useful information about a function or feature. Can also contain references to other publications.	**NOTE:** For information about storing the pin, refer to step 10.
Important	Use to provide important information.	**IMPORTANT:** Ensure paper is not folded, curled, or damaged.
Caution	Cautions are statements that suggest *mechanical* damage as a result of an action.	**CAUTION:** Do not pull the cassette out when holding the front of the machine.
Warning	Used to alert users to the possibility of *personal* injury.	**WARNING:** High voltage is present in the charger section.

1 Handling Paper

This chapter contains explanations on the following topics:

- General Guidelines..... 1-2
- Selecting the Right Paper..... 1-4
- Paper Type..... 1-12
- Loading Paper..... 1-13

General Guidelines

The machine is designed to print on standard copier paper (the type used in ordinary dry copier machines), but it can also accept a variety of other types of paper within the limits specified below.

NOTE: The manufacturer assumes no liability for problems that occur when paper not satisfying these requirements is used.

Selection of the right paper is important. Using the wrong paper can result in paper jams, curling, poor print quality, and paper waste, and in extreme cases can damage the machine. The guidelines given below will increase the productivity of your office by ensuring efficient, trouble-free printing and reducing wear and tear on the machine.

Paper Availability

Most types of paper are compatible with a variety of machines. Paper intended for xerographic copiers can also be used with the machine.

There are three general grades of paper: *economy*, *standard*, and *premium*. The most significant difference between grades is the ease with which they pass through the machine. This is affected by the *smoothness*, *size*, and *moisture content* of the paper, and the way in which the paper is cut. The higher the grade of paper you use, the less risk there will be of paper jams and other problems, and the higher the level of quality your printed output will reflect.

Differences between paper from different suppliers can also affect the machine's performance. A high-quality printer cannot produce high-quality results when the wrong paper is used. Low-priced paper is not economical in the long run if it causes printing problems.

Paper in each grade is available in a range of basis weights (defined later). The traditional standard weights are 60 to 105 g/m² (16 to 28 pounds).

Paper Specifications

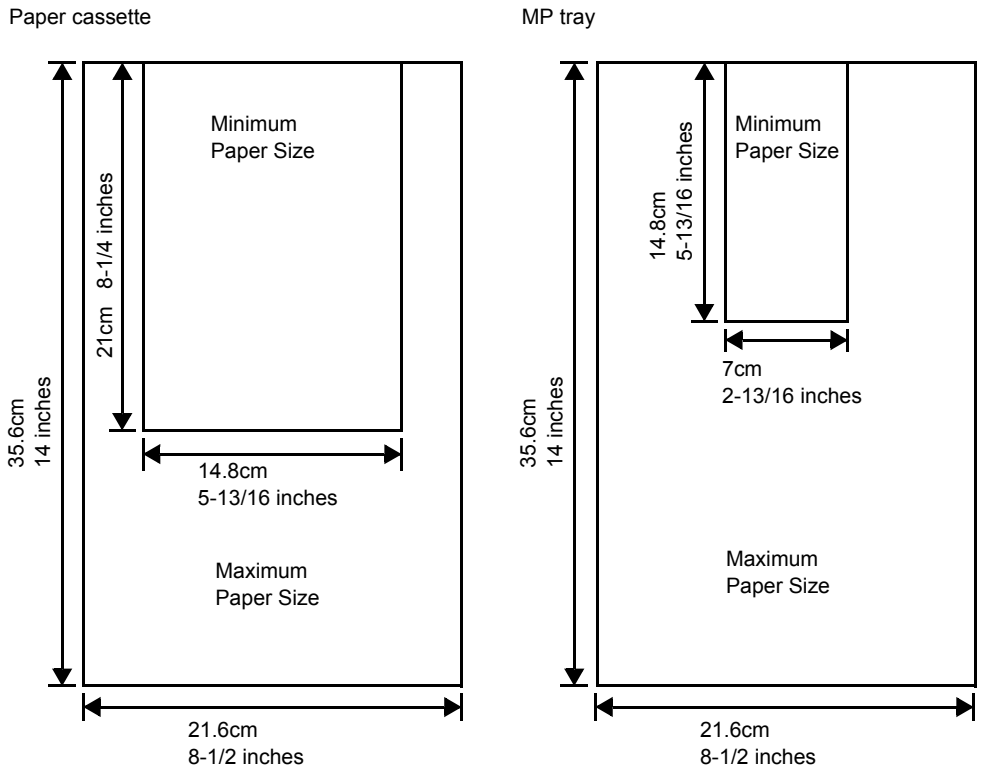
The following table summarizes the basic paper specifications. Details are given on the following pages.

Item	Specification
Weight	Cassette: 60 to 105g/m² (16 to 28 lb/ream) MP Tray: 60 to 200g/m² (16 to 53 lb/ream)
Thickness	0.086 to 0.110mm (3.4 to 4.3 mils)
Dimensions	See *Paper Sizes on page 1-4*
Dimensional accuracy	±0.7mm (±0.0276 inches)
Squareness of corners	90° ±0.2°

Item	Specification
Moisture content	4% to 6%
Direction of grain	Long grain
Pulp content	80% or more

Minimum and Maximum Paper Sizes

The minimum and maximum paper sizes are as follows. For non standard paper, the MP tray must be used.



Recommended Paper

The following products are recommended for use with the printer for optimum performance.

Size	Product	Weight
Letter, Legal	Hammermill LASER PRINT	90 g/m² (24 lb)
A4	NEUSIEDLER COLOR COPY	90 g/m²

Selecting the Right Paper

This section describes the guidelines for selecting paper.

Condition

Avoid using paper that is bent at the edges, curled, dirty, torn, embossed, or contaminated with lint, clay, or paper shreds.

Use of paper in these conditions can lead to illegible printing and paper jams, and can shorten the life of the machine. In particular, avoid using paper with a surface coating or other surface treatment. Paper should have as smooth and even a surface as possible.

Composition

Do not use paper that has been coated or surface-treated and contains plastic or carbon. The heat of fusing can cause such paper to give off harmful fumes.

Bond paper should contain at least 80 % pulp. Not more than 20 % of the total paper content should consist of cotton or other fibers.

Paper Sizes

Cassettes and the *MP Tray* are available for the paper sizes listed in the table below. The dimensional tolerances are ±0.7mm (±0.0276 inches) for the length and width. The angle at the corners must be 90° ±0.2°.

MP tray	Size	Cassette or MP tray	Size
Envelope Monarch	3-7/8 × 7-1/2 inches	Legal	8-1/2 × 14 inches
Envelope #10	4-1/8 × 9-1/2 inches	Letter	8-1/2 × 11 inches
ISO A6	10.5 × 14.8 cm	ISO A4	21 × 29.7 cm
Envelope DL	11 × 22 cm	ISO A5	14.8 × 21 cm
Envelope #9	3-7/8 × 8-7/8 inches	Envelope C5	16.2 × 22.9 cm
Envelope #6	3-5/8 × 6-1/2 inches	ISO B5	17.6 × 25 cm
JIS B6	12.8 × 18.2 cm	JIS B5	18.2 × 25.7 cm
Statement	5-1/2 × 8-1/2 inches	Executive	7-1/4 × 10-1/2 inches
Hagaki	10 × 14.8 cm	Oficio II	8-1/2 × 13 inches
Ofuku-Hagaki	14.8 × 20 cm	Folio	21 × 33 cm

MP tray	Size	Cassette or MP tray	Size
Youkei 2	11.4 × 16.2 cm	16 kai	19.7 cm × 27.3 cm
Youkei 4	10.5 × 23.5 cm		
Custom	Cassette: 14.8 to 21.6 cm × 21 to 35.6 cm (5-13/16 to 8-1/2 inches × 8-1/4 to 14 inches) MP tray: 7 to 21.6 cm × 14.8 to 35.6 cm (2-13/16 to 8-1/2 inches × 5-13/16 to 14 inches)		

Smoothness

The paper should have a smooth, uncoated surface. Paper with a rough or sandy surface can cause voids in the printed output. Paper that is too smooth can cause multiple feeding and fogging problems. (Fogging is a gray background effect.)

Basis weight

Basis weight is the weight of paper expressed in grams per square meter (g/m²). Paper that is too heavy or too light may cause feed errors or paper jams as well as premature wear of the product. Uneven weight of paper, namely uneven paper thickness may cause multiple-sheet feeding or print quality problems such as blurring because of poor toner fusing.

The recommended basis weight is between 60 and 105 g/m² (16 and 28 lb/ream) for the cassette and between 45 and 200 g/m² (16 and 53 lb/ream) for the MP tray.

Paper Weight Equivalence Table

The paper weight is listed in pounds (lb) and metric grams per square meter (g/m²). The shaded part indicates the standard weight.

U. S. Bond Weight (lb)	Europe Metric Weight (g/m²)
16	60
17	64
20	75
21	80
22	81
24	90
27	100
28	105
32	120

U. S. Bond Weight (lb)	Europe Metric Weight (g/m²)
34	128
36	135
39	148
42	157
43	163
47	176
53	199

Thickness

The paper used with the machine should be neither extremely thick nor extremely thin. If you are having problems with paper jams, multiple feeds, and faint printing, the paper you are using may be too thin. If you are having problems with paper jams and blurred printing the paper may be too thick. The correct thickness is 0.086 to 0.110mm (3.4 to 4.3 mils).

Moisture Content

Moisture content is defined as the percent ratio of moisture to the dry mass of the paper. Moisture can affect the paper's appearance, feed ability, curl, electrostatic properties, and toner fusing characteristics.

The moisture content of the paper varies with the relative humidity in the room. When the relative humidity is high and the paper absorbs moisture, the paper edges expand, becoming wavy in appearance. When the relative humidity is low and the paper loses moisture, the edges shrink and tighten, and print contrast may suffer.

Wavy or tight edges can cause jams and alignment anomalies. The moisture content of the paper should be 4 to 6 %.

To ensure correct moisture content, it is important to store the paper in a controlled environment. Some tips on moisture control are:

- Store paper in a cool, dry location.
- Keep the paper in its wrapping as long as possible. Re-wrap paper that is not in use.
- Store paper in its original carton. Place a pallet etc. under the carton to separate it from the floor.
- After removing paper from storage, let it stand in the same room as the machine for 48 hours before use.
- Avoid leaving paper where it is exposed to heat, sunlight, or damp.

Paper Grain

When paper is manufactured, it is cut into sheets with the grain running parallel to the length (long grain) or parallel to the width (short grain). Short

grain paper can cause feeding problems in the machine. All paper used in the machine should be long grain.

Other Paper Properties

Porosity: Indicates the density of paper fiber.

Stiffness: Limp paper may buckle in the machine, resulting in paper jams.

Curl: Most paper naturally tends to curl one way if left unpacked. When paper passes through the fixing unit, it curls upward a little. To produce flat printouts, load the paper so that the upward pressure from the machine can correct their curling.

Electrostatic discharge: During the printing process the paper is electrostatically charged to attract the toner. The paper must be able to release this charge so that printed sheets do not cling together in the *Output Tray*.

Whiteness: The contrast of the printed page depends on the whiteness of the paper. Whiter paper provides a sharper, brighter appearance.

Quality control: Uneven sheet size, corners that are not square, ragged edges, welded (uncut) sheets, and crushed edges and corners can cause the machine to malfunction in various ways. A quality paper supplier should take considerable care to ensure that these problems do not occur.

Packaging: Paper should be packed in a sturdy carton to protect it from damage during transport. Quality paper obtained from a reputable supplier is usually correctly packaged.

Special Paper

The following types of special paper can be used:

Paper type to be used	Paper type to be selected
Thin paper (60 to 64 g/m²)	`Vellum`
Thick paper (90 to 200 g/m²)	`Thick`
Colored paper	`Color`
Recycled paper	`Recycled`
Overhead projector transparencies	`Transparency`
Postcards	`Cardstock`
Envelopes	`Envelope`
Label	`Labels`

Use paper that is sold specifically for use with copiers or printers (heat-fusing type). When using transparencies, labels, thin paper, envelopes, postcards, or thick paper, feed the paper from the *MP Tray*.

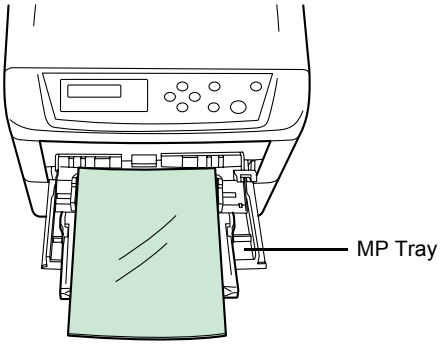
Since the composition and quality of special paper vary considerably, special paper is more likely than white bond paper to give trouble during printing. No liability will be assumed if moisture and so forth given off during printing on special paper causes harm to the machine or operator.

NOTE: Before purchasing any type of special paper, test a sample on the machine and check that printing quality is satisfactory.

Transparency

Transparencies must be able to withstand the heat of fusing during the printing process. The recommended transparency product is 3M CG3700 (Letter, A4).

Transparencies must be placed on the *MP tray* with the long edge towards the printer. To avoid problems, stack transparencies face up on the face-up tray option.



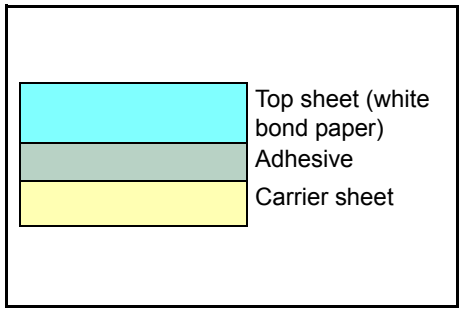
When unloading transparencies (e.g., for clearing jams), hold them carefully by the edges to avoid leaving fingerprints on them.

Labels

Labels must be fed from the *MP Tray*.

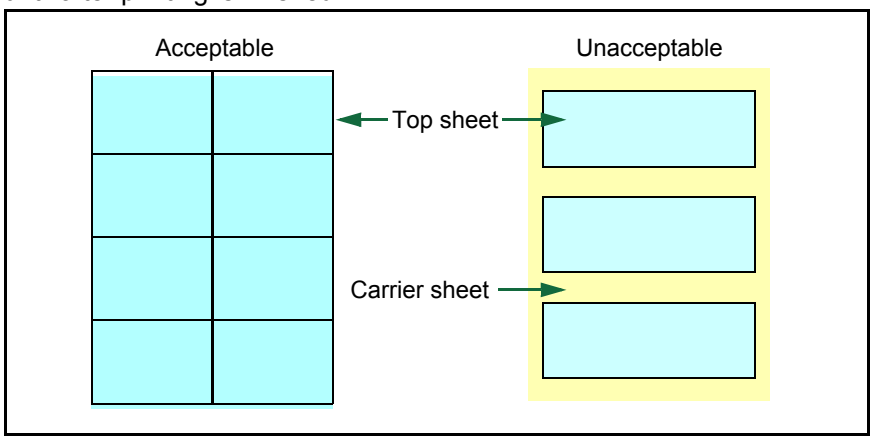
The basic rule for printing on adhesive labels is that the adhesive must never come into contact with any part of the machine. Adhesive paper sticking to the drum or rollers will damage the machine.

Label paper has a structure comprising of three layers, as shown in the diagram. The top sheet is printed on. The adhesive layer consists of pressure-sensitive adhesives. The carrier sheet (also called the linear or backing sheet) holds the labels until used. Due to the complexity of its composition, adhesive-backed label paper is particularly likely to give printing problems.



Adhesive label paper must be entirely covered by its top sheet, with no spaces between the individual labels. Labels with spaces in between are liable to peel off, causing serious paper jam problems.

Some label paper is manufactured with an extra margin of top sheet around the edge. Do not remove the extra top sheet from the carrier sheet until after printing is finished.

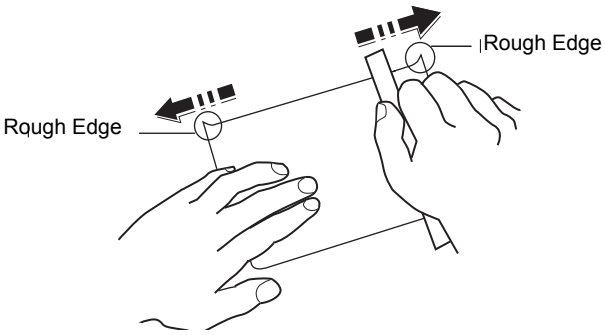


The table below lists the specifications for adhesive label paper.

Item	Specification
Weight of top sheet	44 to 74g/m² (12 to 20 lb/ream)
Composite weight	104 to 151g/m² (28 to 40 lb/ream)
Thickness of top sheet	0.086 to 0.107mm (3.9 to 4.2 mils)
Composite thickness	0.115 to 0.145mm (4.5 to 5.7 mils)
Moisture content	4 to 6% (composite)

Postcards

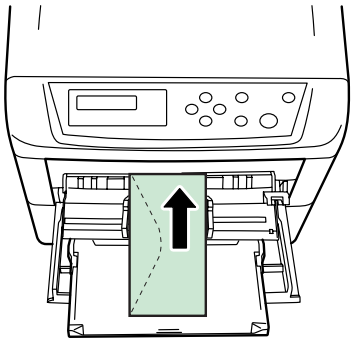
Fan the stack of postcards and align the edges before loading them in the MP tray. Make sure the postcards you are going to set are not curled. Feeding curled postcards may cause paper jams.



Some postcards have rough edges on the back (those are created when the paper is cut). In this case, put the postcards on a flat place and rub the edges with, for example, a ruler to smooth them.

Envelopes

Envelopes should be fed in the face-up position, right edge first.



Since the composition of an envelope is more complex than that of ordinary paper, it is not always possible to ensure consistent printing quality over the entire envelope surface.

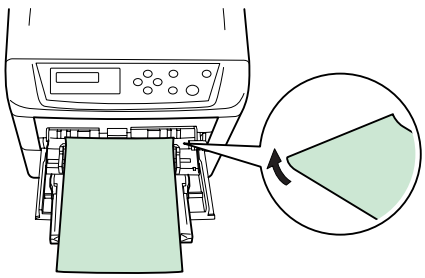
Normally, envelopes have a diagonal grain direction. See *Paper Grain on page 1-6*. This direction can easily cause wrinkles and creases when envelopes pass through the printer. Before purchasing envelopes, make a test print to check whether the printer accepts the envelope.

- Do not use envelopes that have an encapsulated liquid adhesive.
- Avoid a long printing session for envelopes only. Extended envelope printing can cause premature printer wear.
- If jams occur, try setting a lesser number of envelopes on the MP tray.
- To avoid jams caused by curled envelopes, stack no more than 10 printed envelopes on the output tray.

Thick Paper

Fan the stack of paper and align the edges before loading them in the MP tray. Some types of paper have rough edges on the back (those are created when the paper is cut). In this case, put the paper on a flat place and rub the edges once or twice with, for example, a ruler to smooth them. Feeding rough edged paper may cause paper jams.

NOTE: If the paper jams even after you smooth it out, load the paper in the *MP Tray* with the leading edge raised up a few millimeters as shown in the illustration.



Colored Paper

Colored paper should satisfy the same conditions as white bond paper, refer to *Paper Specifications, on page 1-2.* In addition, the pigments used in the paper must be able to withstand the heat of fusing during the printing process (up to 200°C or 392°F).

Preprinted Paper

Preprinted paper should satisfy the same conditions as white bond paper, refer to *Paper Specifications, on page 1-2.*The preprinted ink must be able to withstand the heat of fusing during the printing process, and must not be affected by silicone oil.

Do not use paper with any kind of surface treatment, such as the type of paper commonly used for calendars.

Recycled paper

Select recycled paper that meets the same specifications as the white bond paper except for whiteness, refer to *Paper Specifications, on page 1-2.*

NOTE: Before purchasing recycled paper, test a sample on the machine and check that the printing quality is satisfactory.

Paper Type

The printer is capable of printing under the optimum setting for the type of paper being used.

Setting the paper type for the paper source from the printer's operator panel will cause the printer to automatically select the paper source and print in the mode best suited to that type of paper.

A different paper type setting can be made for each paper source including the MP tray. Not only can preset paper types be selected, but it is also possible for you to define and select customized paper types. See *Creating Custom Paper Type on page 2-70*. The following types of paper can be used.

Paper Type	Paper source			
	MP tray	Paper Cassette	Paper Weight	Duplex path (MP tray available only in Cassette mode)
Plain	Yes	Yes	Normal 2	Yes
Transparency	Yes	No	Extra Heavy	No
Preprinted	Yes	Yes	Normal 2	Yes
Labels	Yes	No	Heavy 1	No
Bond	Yes	Yes	Normal 2	Yes
Recycled	Yes	Yes	Normal 2	Yes
Vellum	Yes	No	Light	No
Rough	Yes	Yes	Normal 2	Yes
Letterhead	Yes	Yes	Normal 2	Yes
Color	Yes	Yes	Normal 2	Yes
Prepunched	Yes	Yes	Normal 2	Yes
Envelope	Yes	No	Heavy 1	No
Cardstock	Yes	No	Heavy 2	No
Coated	Yes	No	Normal 2	No
Thick	Yes	No	Heavy 1	No
High quality	Yes	Yes	Normal 2	Yes
Custom 1 (to 8)†	Yes	Yes	Normal 2	Yes
Yes: Can be stored No: Cannot be stored				

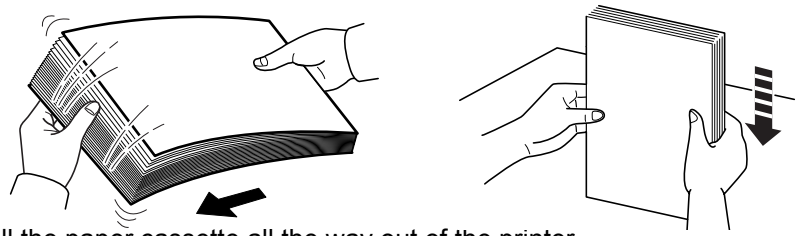
†. This is a paper type defined and registered by the user. Up to eight types of user settings may be defined. For details on *Creating Custom Paper Type on page 2-70*.

Loading Paper

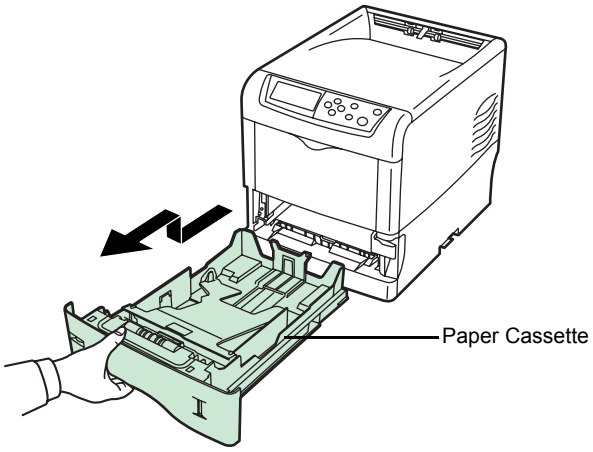
The following explains the procedure for loading paper in the cassette and the MP tray.

Loading Paper into the Cassette

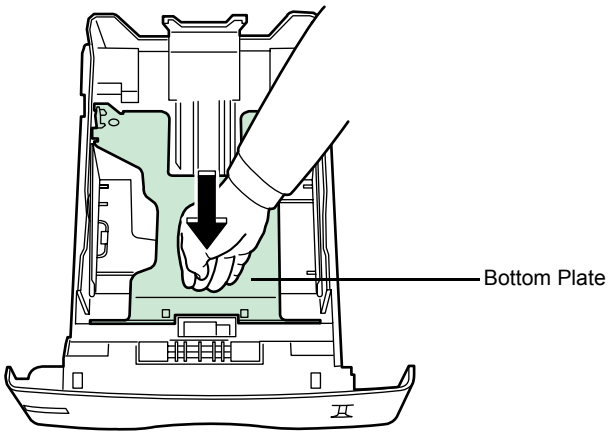
1 Fan the media (paper/transparencies), then tap it on a level surface to avoid media jams or skewed printing.



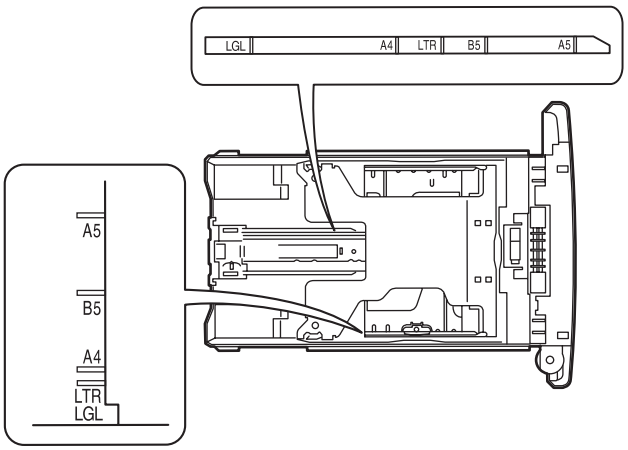
2 Pull the paper cassette all the way out of the printer.



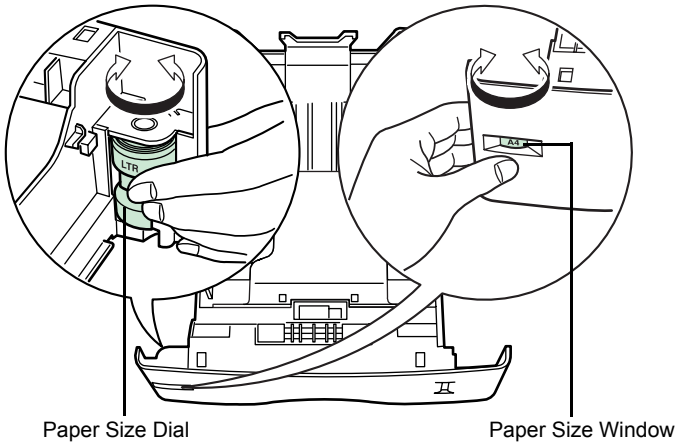
3 Push the bottom plate down until it locks.



Standard paper sizes are marked on the inside of the paper cassette.

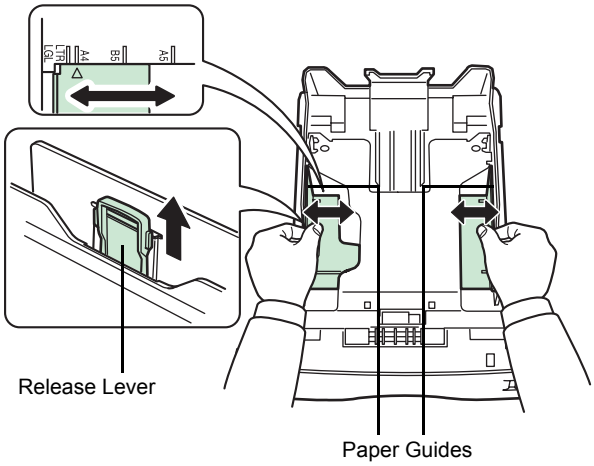


4 Turn the paper size dial so that the size of the paper you are going to use appears in the paper size window.



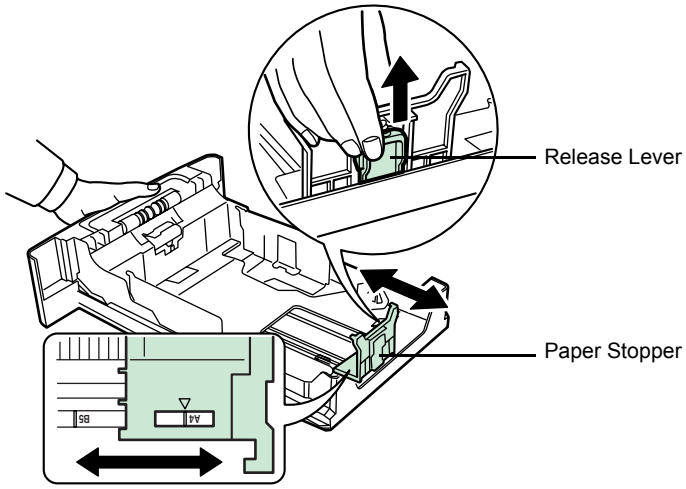
NOTE: When the paper size dial is set to OTHER the paper size must be set into the printer on the operator panel. See *Setting the Cassette Paper Size on page 2-63*.

5 Pull the release lever on the left side guide and slide to the desired paper size.

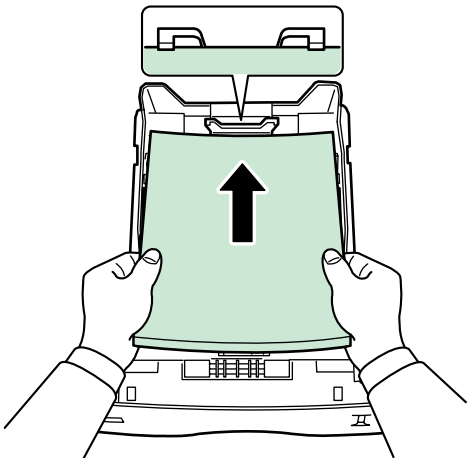


6 Pull the release lever and slide the paper stopper to the desired paper size.

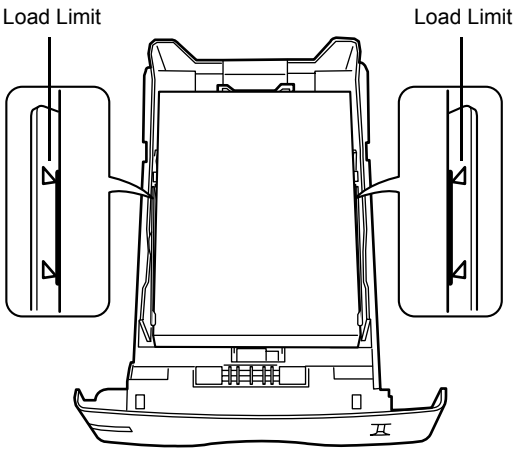
When using non-standard size paper, move the paper guides and paper stopper all the way out, insert the paper, then adjust the paper guides and paper stopper to the size of the paper. Adjust them so that they are in light contact with the paper.



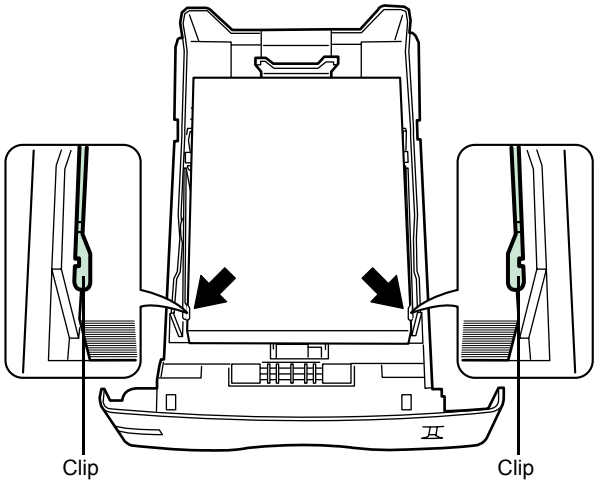
7 Slide the paper into the paper cassette.



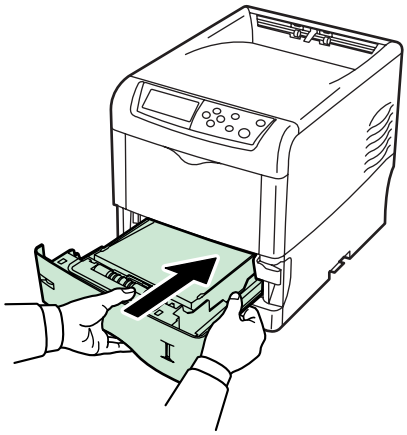
NOTE: Do not load more paper than will fit under the load limits on the paper guides.
The paper cassette will hold approximately 500 sheets of 80g/m² (21 lb.) paper with a thickness of 0.11mm.



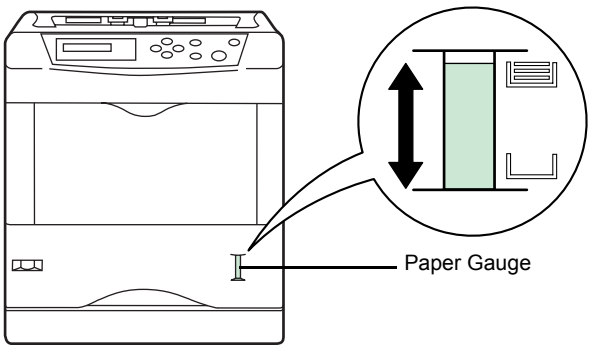
8 Set the stack of paper so that it is under the clips as shown.



9 Insert the paper cassette into the slot in the printer. Push it straight in as far as it will go.

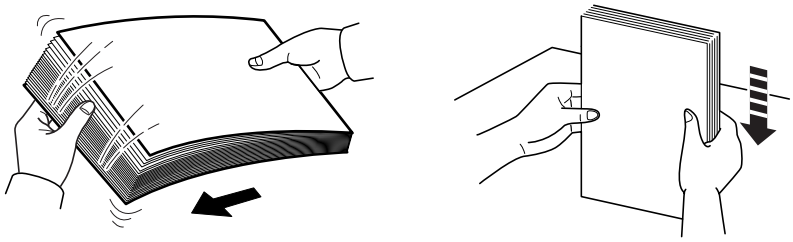


There is a paper gauge on the right side of the front of the paper cassette to indicate the remaining paper supply. When paper is exhausted, the pointer will go down to the level of ⌴ (empty).

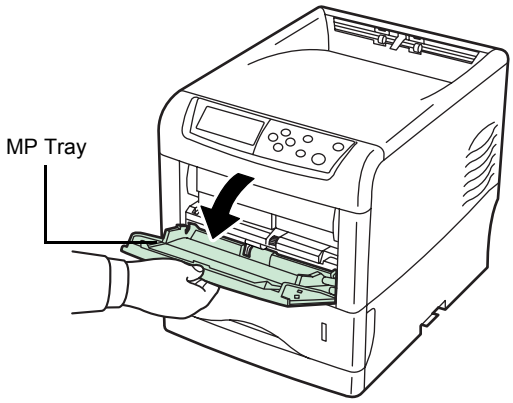


Loading Paper into the MP (Multi-Purpose) Tray

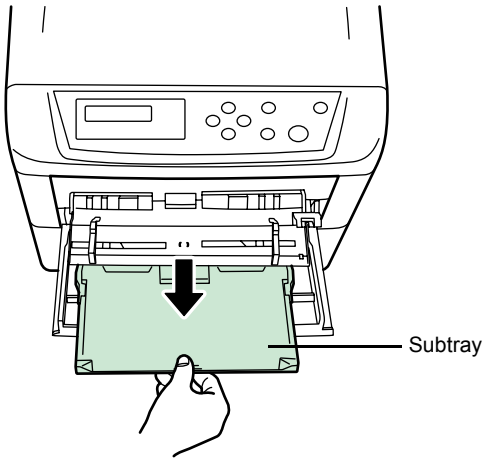
1 Fan the media (paper/transparencies), then tap it on a level surface to avoid media jams or skewed printing.



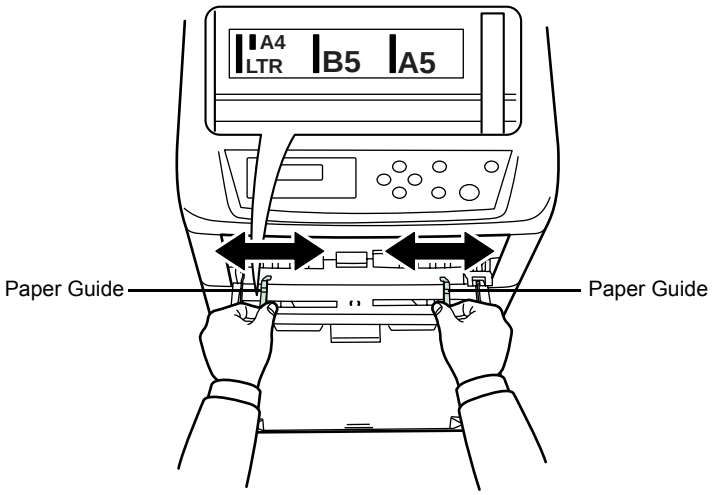
2 Pull the MP tray towards you until it stops.



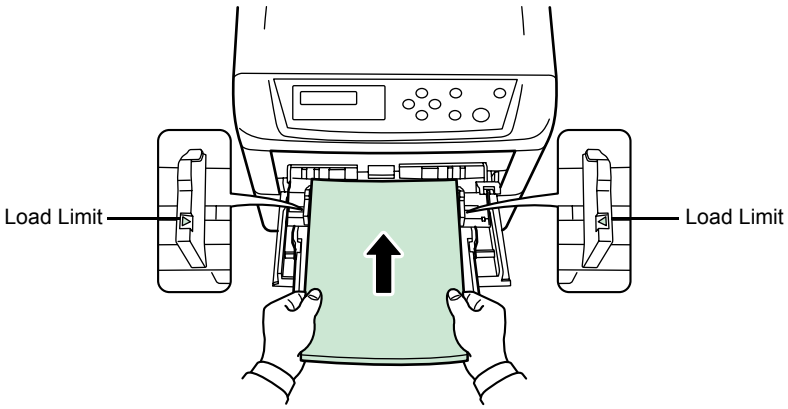
3 Pull out the subtray.



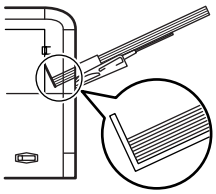
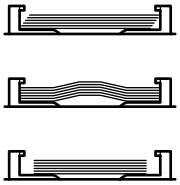
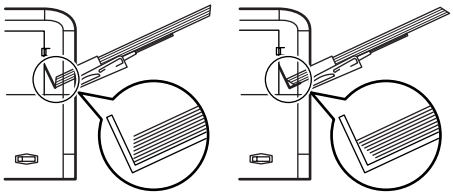
4 Adjust the position of the paper guides on the MP tray. Standard paper sizes are marked on the MP tray. For standard paper sizes, slide the guides to the position marked correspondingly.



5 Align the paper with the paper guides and insert as far as it will go.



NOTE: Do not load more paper than will fit under the load limits on the inside of the MP tray.
If the paper is considerably curled in one direction, for example, if the paper is already printed on one side, try to roll the paper in the opposite direction to counteract the curl. Printed sheets will then come out flat.

Correct		
Incorrect		

6 Set the MP tray paper size on the printer's operator panel. Refer to *Setting MP Tray Paper Size on page 2-61*.

2 Using the Operator Panel

This chapter contains explanations on the following topics:

- General Information..... 2-2
- Understanding the Operator Panel..... 2-3
- Canceling a Printing Job 2-10
- Using the Menu Selection System 2-11
- Status Pages 2-15
- e-MPS 2-18
- Changing the Interface Parameters 2-29
- Making Default Settings 2-37
- Pagination 2-44
- Setting Print Quality..... 2-49
- Operating the Storage Device 2-51
- Paper Handling..... 2-60
- Selecting Monochrome or Color Printing..... 2-74
- Reading Life Counters..... 2-75
- Other Modes..... 2-77

General Information

This chapter provides the information you need to configure the Ecosys Color printer. In general you need to use the operator panel only to make default settings. You can make most changes to the printer settings using the printer driver through the application software.

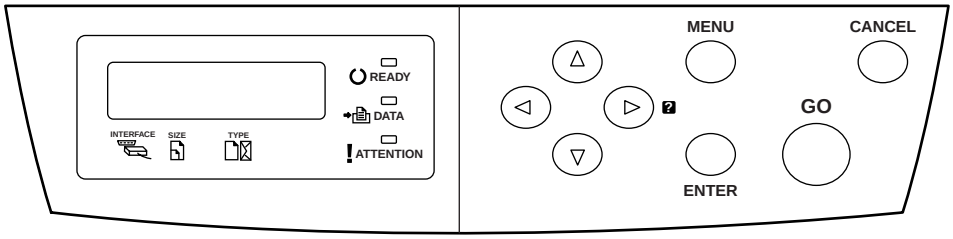
NOTE: Changes to printer settings made using a software application override changes made using the operator panel.

You can also rely on other printer utilities such as NET for Clients if you need to change settings that are not available on the printer driver. It will allow remote access to printer settings. Printer utilities are supplied in the CD-ROM supplied with the printer.

The chapter describes the operator panel in detail, including its menus and the procedures for changing various printer settings.

Understanding the Operator Panel

The operator panel on the top of the printer has a 2-line by 16-character liquid crystal display (LCD), eight keys, and three indicators (LED).



Messages that appear on the display and functions of indicators and keys are explained in this chapter.

Message Display

The message display on the operator panel shows:

- Status information, the ten messages listed below which are displayed during normal operation.
- Error codes, when the printer requires the operator's attention; as explained in the Basic Operation Guide.

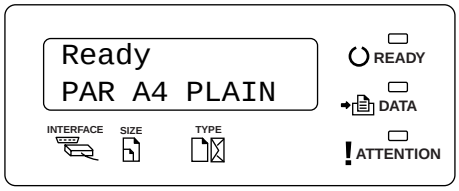
Status Information

Message	Meaning
`Self test`	The printer is performing self-diagnostics after power-up.
`Please wait`	The printer is warming up and is not ready. When the printer is switched on for the first time, this message will take several minutes.
`Please wait (Adding toner)`	Toner is currently being replenished. This message may be displayed during continuous printing of a large volume of pages which require a large amount of toner such as with photographs, etc.
`Please wait (Calibrating)`	The color calibration function is being performed automatically as you powered on the printer. You can also execute this function manually on the operator panel. For details, see *Color Calibration on page 2-89*.
`Ready`	The printer is ready to print.
`Processing`	The printer is receiving data to print. This is also shown when the printer is reading a memory card, hard disk or RAM disk.
`Sleeping`	The printer is in Auto Sleep. The printer wakes from Auto Sleep whenever a key on the operator panel and **[GO]** is pressed, the cover is opened or closed, or a print job is received. The printer then warms up and goes on-line. For details on Auto Sleep, see *Sleep Timer Timeout Time on page 2-79*.
`Cancelling data`	Jobs inside the printer are being canceled. To cancel a job, see *Canceling a Printing Job on page 2-10*.
`Skipping data`	The printer is skipping the data.
`Waiting`	The printer is waiting for the rest of print job before completing the last page. Pressing **[GO]** allows you to obtain the last page immediately. See below.
`FormFeed TimeOut`	The printer is printing the last page after a waiting period.

Error codes

See the *Troubleshooting* section in the *Basic Operation Guide*.

Indicators in Message Display



Interface Indicator (INTERFACE)

The interface indicator shows the interface that is currently in use:

PAR	Parallel interface is in use.
USB	USB interface is in use.
SER	Serial (RS-232C) interface is in use. (option)
NET	Network interface is in use.
OPT	Network interface is in use. (option)
---	No interface is in use.

Each interface has a timeout time of 30 seconds (factory default) during which the other interface should wait to receive a print job. Even after a print job has been completed on the interface, you should wait for this period until the other interface begins printing the job.

Paper Size Indicator (SIZE)

This indicator shows:

- While the printer is in standby, the paper size of the current cassette. The default paper cassette is determined by the operator panel keys. For details, see *Paper Handling on page 2-60*.
- While the printer is printing, the paper size used to format the document to print by the application software.

The abbreviations used to indicate the paper sizes and their dimensions are as follows:

A4	ISO A4 (21 × 29.7 cm)
A5	ISO A5 (14.8 × 21 cm)
A6	ISO A6 (10.5 × 14.8 cm)†
B5	JIS B5 (18.2 × 25.6 cm)
B6	JIS B6 (12.8 × 18.2 cm)†
LT	Letter (8-1/2 × 11 inches)
LG	Legal (8-1/2 × 14 inches)

MO	Envelope Monarch (3-7/8 × 7-1/2 inches)†
DL	Envelope DL (11 × 22 cm)†
C5	Envelope C5 (16.2 × 22.9 cm)
b5	ISO B5 (17.6 × 25 cm)
EX	Executive (7-1/4 × 10-1/2 inches)
#6	Envelope #6 (3-5/8 × 6-1/2 inches)†
#9	Envelope #9 (3-7/8 × 8-7/8 inches)†
10	Envelope #10 (4-1/8 x 9-1/2 inches)†
HA	Hagaki (10 × 14.8 cm)†
OH	Oufuku Hagaki (20 × 14.8 cm)†
O2	Oficio II (8-1/2 × 13 inches)
16K	16 kai (19.7 × 27.3 cm)
ST	Statement (5-1/2 × 8-1/2 inches)†
FO	Folio (21 × 33 cm)
Y2	Yokei 2 (11.4 × 16.2 cm)†
Y4	Yokei 4 (10.5 × 23.5 cm)†
CU	Custom Size (MP Tray: 7 x 14.8 cm to 21.6 x 35.6 cm, Cassette: 14.8 x 21 cm to 21.6 x 35.6 cm)

†. Only with MP tray feeding

Paper Type Indicator (TYPE)

This indicator shows the paper type defined for the current paper casette. The paper type can be manually defined using the operator panel. For more information, see *Paper Handling on page 2-60*. The following abbreviations are used:

(none)	Auto	LETTERHD	Letterhead
PLAIN	Plain paper	COLOR	Colored paper
TRANSP.	Transparency†	PREPUNCH	Prepunched paper
PREPRINT	Preprinted paper	ENVELOPE	Envelope†
LABELS	Labels†	CARDSTOCK	Card stock†
BOND	Bond paper	COATED	Coated paper†
RECYCLED	Recycled paper	THICK	Thick paper†
VELLUM	Vellum†	HIGH QLT	High-quality paper for color printing
ROUGH	Rough paper	CUSTOM 1 (to 8)	Custom 1 (to 8)

†. Only with MP tray feeding

READY, DATA, and ATTENTION Indicators

The following indicators light during normal operation and whenever the printer needs attention. Depending on the status of lighting, each indicator has the following meaning:

Indicator	Description
READY	**Flashing.** Indicates an error that you can resolve. For details, see the *Troubleshooting* section in the *Basic Operation Guide*. **On.** Indicates that the printer is ready and on-line. The printer prints the data it receives. **Off.** Indicates that the printer is off-line. Data can be received but will not be printed until the printer is switched on-line by pressing **[GO]**. Also, indicates when printing is automatically stopped due to an error condition. For details see the *Troubleshooting* section in the *Basic Operation Guide*.
DATA	**Flashing.** Indicates that a data is being received. **On.** Indicates either that data received is being processed before printing starts, or that data received is being written to a memory card, hard disk or RAM disk.
ATTENTION	**Flashing.** Indicates that the printer requires maintenance or is warming up. **On.** Indicates the occurrence of a problem or an error. For details, see the *Troubleshooting* section in the *Basic Operation Guide*.

Keys

The operator panel keys are used to configure the printer operation. Note that certain keys have a secondary function.

NOTE: The printer has a parallel, USB, network, and an optional interface. Configuration of the printer settings affect only the interface that is currently active (shown by the INTERFACE indicator on the message display). See *Interface Indicator (INTERFACE) on page 2-5*.

GO Key

GO switches the printer between on-line and off-line. Use this key to:

- Toggle the printer's on-line and off-line states. You can temporarily stop the print job by switching the printer off-line.
- Print and feed out one page when the printer displays `Waiting`.

- Recover from certain errors.
- Recover from Auto Sleep.

CANCEL Key

This key is used to:

- Cancel a printing job.
- Stop the alarm sound.
- Reset numeric values or cancel a setting procedure while using menu system.

1 While the printer displays `Processing`, press **[CANCEL]**.

`Print Cancel?` appears on the message display followed by the interface in use. The interface is indicated by one of the following message:

`Parallel`
`USB`
`Network`
`Serial` (option serial interface)
`Option` (option network interface)

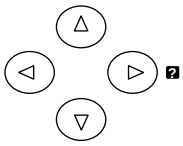
2 Press **[ENTER]**. `Cancelling data` appears on the message display and printing stops after the current page is printed.

MENU Key

MENU lets you enter the menu system to change the setup and printing environment of the printer.

Pressing this key during a menu selection will terminate the selection and return the printer to the normal operation.

Arrow Keys



The four arrow keys are used in the menu system to access an item or enter numeric values.

The arrow key with the question mark (?) may be pressed when the paper jam message has appeared on the message display. A help message will then appear to facilitate jam clearing in the location.

ENTER Key

ENTER

This key is used to:

- Finalize settings of numeric values and other selections.
- Set the paper source when `Use alternative?` is shown in the message display.

NOTE: If you hold down **[ENTER]** and press **[MENU]** when `Ready` is shown on this printer, the AdministrationID menu will be displayed. This menu is the setting menu for administration under the Account Management System and is normally not used. Press **[MENU]** to return to `Ready`.

Canceling a Printing Job

1 While the printer displays `Processing`, press **[CANCEL]**.

`Print Cancel?` appears on the message display followed by the interface in use. The interface is indicated by one of the following messages:

`Parallel`
`USB`
`Network`
`Serial` (option serial interface)
`Option` (option network interface)

2 Press **[ENTER]**. `Cancelling data` appears on the message display and printing stops after the current page is printed.

Using the Menu Selection System

Menu Selection System

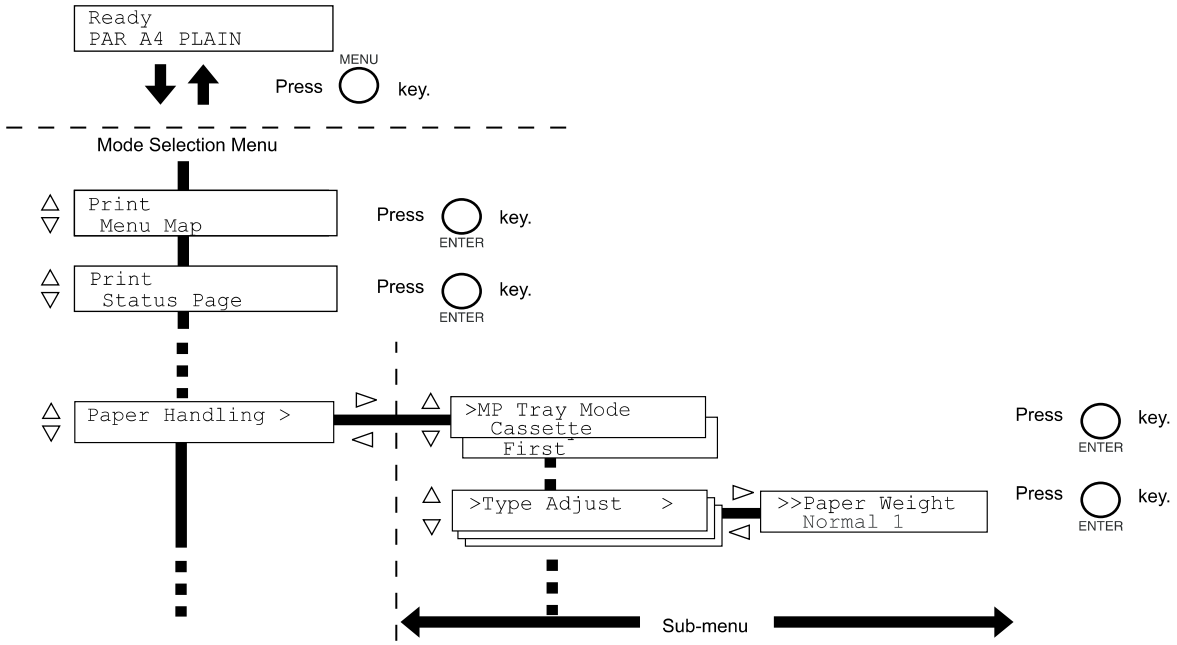
This section explains how to use the menu selection system. **[MENU]** on the operator panel allows you to use the menu to configure the printer settings to your specific needs. Settings can be made when Ready is indicated on the printer message display.

NOTE: Settings that are received from application software and the printer driver will take priority over settings made in the operator panel.

Entering the Mode Selection Menu

Press **[MENU]** when Ready is indicated on the printer message display.

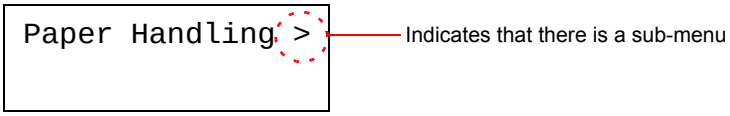
The mode selection menu is displayed.



Selecting a Menu

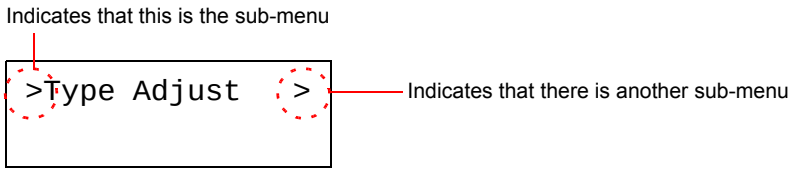
The mode selection menu is hierarchical. Press △ or ▽ to display the desired menu.

If the selected menu has a sub-menu, > is displayed after the menu.



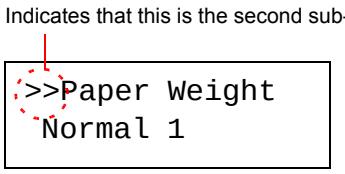
Press ▷ to move to the sub-menu or ◁ to go back.

> is displayed before the sub-menu.



Press ▷ to move to another sub-menu or ◁ to go back.

>> is displayed before the second sub-menu.



Setting a Menu

Select the desired menu and press **[ENTER]** to set or change the configuration.

Press △ or ▽ to display the desired item and **[ENTER]** to finalize the value or selections set.

Cancelling Menu Selection

If you press **[MENU]** when a menu is selected, the message display returns to `Ready`.

Menu System Road Map

The menu map is the hierarchy diagram of the menu selection system of the printer. The menu map is useful as a reference to guide yourself through the menu selection system.

Printing a Menu Map

The printer prints a full list of the menu selection system — Menu Map. Note that menus shown in the list may vary depending on which optional units installed in the printer.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Print Menu Map` appears.

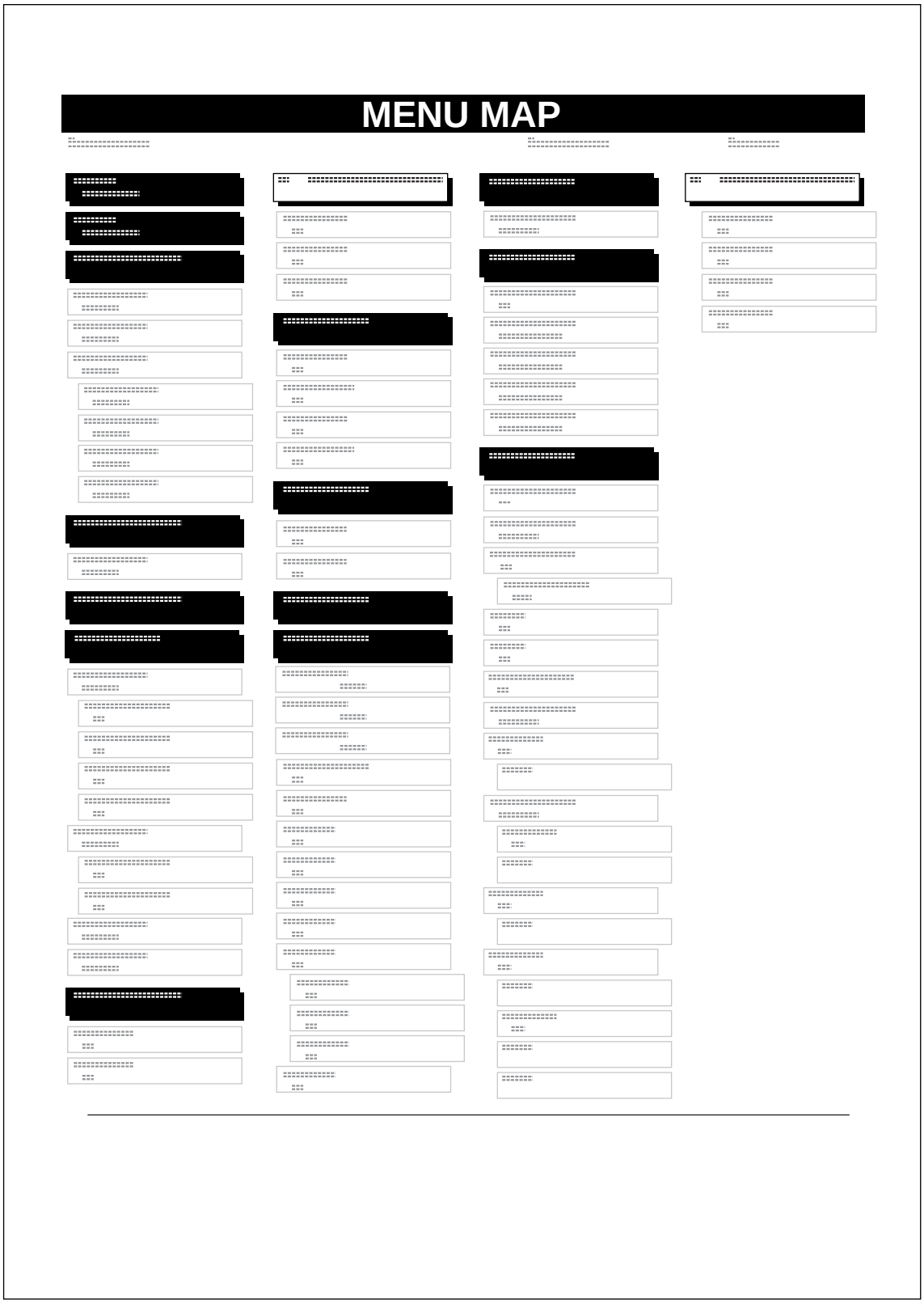
```
Print
 Menu Map
```

3 Press **[ENTER]**. A question mark (?) appears.

```
Print
 Menu Map ?
```

4 Press **[ENTER]**. The message `Processing` appears and the printer prints a Menu Map.

Menu Map Sample



Status Pages

This section explains the procedure for printing the status pages. The status page is a list of parameters and settings for most basic printer configurations. You may be required to produce a status page when requesting service to the printer.

Printing a Status Page

You can check the printer's current status, including available memory space and option settings by printing a status page.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Print Status Page` appears.

```
Print
 Status Page
```

3 Press **[ENTER]**. A question mark (?) appears.

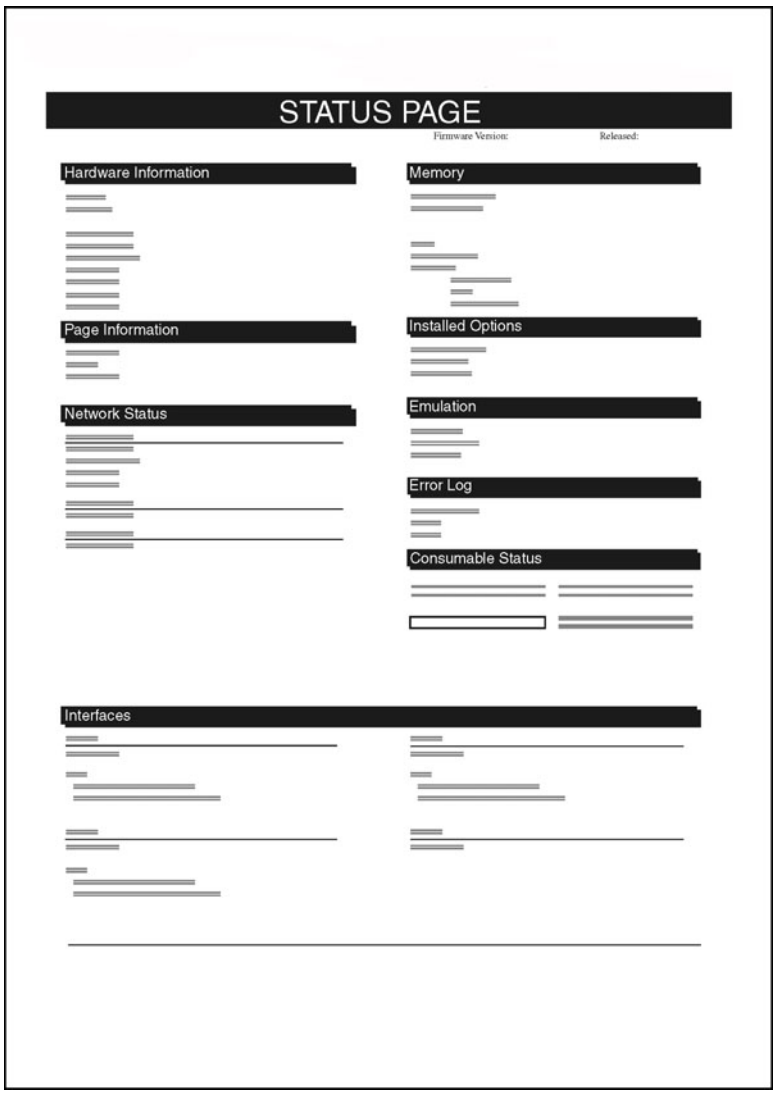
```
Print
 Status Page ?
```

4 Press **[ENTER]** again. The message `Processing` appears and the printer prints a status page.

For a sample status page and its full description, see *Understanding the Status Page on page 2-16.*

Understanding the Status Page

The numbers in the following diagram refer the items explained below the diagram. The items and values on the status page may vary depending on the printer's firmware version.



1 Firmware Version

This item shows the version and release date of the printer firmware.

2 Hardware Information

This item shows various printer settings for hardware-related items:

- MP tray paper size and type
- Paper cassette size and type
- Buzzer control
- Host buffer size

- Sleep time timeout time
- Formfeed timeout time

3 Memory

This item shows:

- Standard memory in the printer
- Option memory slot status (Slots 1 and 2) in kilobytes
- Total memory in the printer
- Current status of the RAM disk

4 Page Information

This item shows the page related items:

- Number of copies, from 1 to 999
- Total page count

5 Installed Options

This item shows the options installed in the printer:

- Hard disk
- Option ROM
- Memory card

6 Network Status

This item shows the IP address, subnet mask address, and default gateway address for the network interface card in the printer.

7 Emulation

This item shows all available emulations of the printer. The PCL 6 emulation is set as default when the printer is shipped from the factory. The emulations are:

- PCL 6
- KPDL3

8 Error Log

This item shows the last three instances of the following types of errors, listing them in the order of occurrence:

- KPDL (PostScript) errors
- Memory overflow
- Print overrun
- File-not-found

The most recent error is displayed on the topmost line of the Error Log. Error information is cleared when the printer is powered off.

The error log information is intended for service use.

9 Consumable Status

This item shows the approximate level of remaining toner. When the value is 100, the toner container is full. The closer to 0, the smaller the amount of remaining toner.

10 Interface Information

This information shows the emulation and the default font for all interfaces installed in the printer.

e-MPS

e-MPS is an abbreviation for *enhanced-Multiple Printing System* which implements the following functions that are available from the printer driver:

- Job Retention
- Job Storage

In either job mode, when printing a document, the print data is transferred from the computer to the printer then stored on the printer's hard disk. Since copies of the document are printed using the stored data, printing is performed faster with less computer spooling time and less network traffic.

NOTE: To use the e-MPS system, an optional hard disk must be installed in the printer. For details, see *Hard Disk on page 3-9*.
The RAM disk may also be used in the Proof-and-Hold and Private Print modes. See *Using the RAM Disk on page 2-58* for details on RAM disk setup.

Job Retention

Job Retention has four modes as summarized below. These modes are selected from the printer driver through the application software:

	Quick Copy	Proof-and-Hold	Private Print	Stored Job
Primary function	To later print additional copies	To proof the first copy before printing multiple copies	To hold the document in printer to prevent unauthorized access	To electronically store documents such as fax cover pages
Start storing by	Printer driver	Printer driver	Printer driver	Printer driver
On terminating print setting from application software	Prints simultaneously	Prints one copy simultaneously	Does not print	Does not print
Retrieved by	Operator panel	Operator panel	Operator panel	Operator panel
Default number of copies printed at retrieval	Same as storing (can be changed)	One less (can be changed)	Same as storing (can be changed)	One (can be changed)
Maximum number of jobs stored†	32, expandable to 50	32, expandable to 50	Depends on the hard disk capacity	Depends on the hard disk capacity
PIN security	No	No	Yes	Yes (if necessary)
Data after printing	Stored	Stored	Deleted	Stored
Data at power off	Deleted	Deleted	Deleted	Stored

†. Jobs in excess will cause the earlier ones to be deleted.

Job Storage

Job storage stores print jobs either temporarily or permanently, or in virtual mailboxes, as you click an appropriate radio button on the printer driver when printing from a computer.

Virtual Mailbox

Virtual mailbox is part of Job Storage, which stores print jobs on the hard disk without printing. It enables you to retrieve jobs later from the operator panel or the **Printer Disk Manager utility** in the CD-ROM.

Each mailbox may be used by an individual who desires to share the printer in this mode. By default, each mailbox is numbered from 'Tray 001,' 'Tray 002,'... etc. To 'post' a job in one of these mailboxes, you assign a numbered or named mailbox on the printer driver when printing.

To retrieve the stored job for printing, see *Retrieving Jobs from Virtual Mailbox (VMB) on page 2-23*.

NOTE: The virtual mailbox can be used in PCL 6 emulation only.

Using Quick Copy

This mode enables you to print the requested number of copies of a job, simultaneously storing the job on the hard disk/RAM disk. When additional copies are required, you can reprint the required number of copies from the printer operator panel. To print a job as a quick copy job, see *KX Printer Drivers Operation Guide*.

The default number of print jobs that can be stored on the hard disk is 32. This value can be increased to up to 50 from the e-MPS Configuration menu. For details, see *Changing the Maximum Number of Quick Copy/ Proof-and-Hold Jobs on page 2-25*. When the number of jobs reaches the limit, the oldest job will be overwritten by the new one. When the printer is turned off, all stored jobs will be deleted.

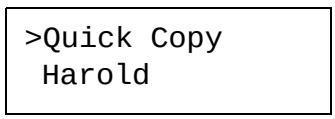
Printing Additional Copies using Quick Copy

1. Press **[MENU]**.

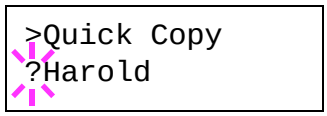
2. Press △ or ▽ repeatedly until `e-MPS >` appears.

3. Press ▷.

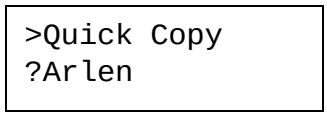
4. Press △ or ▽ repeatedly until `>Quick Copy` appears followed by the user name (`Harold`, in this example). The user name is assigned at printing using the printer driver.



5 Press **[ENTER]**. A blinking question mark (?) appears before the user name.



6 Press △ or ▽ to display the desired user name, `Arlen`, in this example.



7 Press **[ENTER]**. The job name entered in the printer driver (`Report`, in this example) appear with a blinking question mark (?) before the letters.

8 Press △ or ▽ to scroll to the desired job title.

9 Press **[ENTER]**. The number of copies to be printed can be set. To increase the copy count, press △; to decrease the copy count, press ▽.

10 Press **[ENTER]** to finalize the copy count. The printer prints the specified number of copies for the job.

Deleting a Quick Copy Job

1 Follow steps 1 through 8 in the above section to let the title of the job to be deleted displayed.

2 When the title of the job to be deleted is displayed, e.g. `Report`, press **[ENTER]**. The cursor below the copy count starts to blink.

3 Press ▽ repeatedly until `Delete` appears below the title.

4 Press **[ENTER]**. The stored quick copy job is deleted.

Using Proof-and-Hold

When you print multiple copies, this mode first prints one copy so that you can proof it before continuing to print the remaining copies. Since you can proof the printouts before printing the remaining copies, wastage of paper can be reduced.

The printer prints one copy and, at the same time, saves the print job on the hard disk/RAM disk. You can also change the number of copies when resuming printing from the operator panel.

When the printer is turned off, all stored jobs will be deleted.

Printing Remaining Copies of a Proof and Hold Job

Printing a Proof-and-Hold job on the operator panel is similar to printing a quick copy job. *See Printing Additional Copies using Quick Copy on page 2-19.*

Printing a Private Print/Stored Job

In private printing, you can specify that a job is not printed until you release the job from the operator panel. When sending the job from the application software, specify a 4-digit access code in the printer driver. The job is released for printing by entering the access code on the operator panel ensuring confidentiality of the print job.

In the stored job mode, access codes are not mandatory, but can be set on the printer driver if printing with PIN security is required. Then, the access code must be entered on the operator panel to print a stored job. Print data will be stored in the hard disk after printing. See *KX Printer Drivers Operation Guide* for the driver settings.

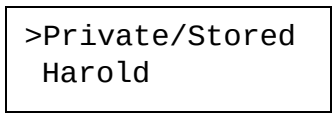
Releasing a Private/Stored Job

1. Press **[MENU]**.

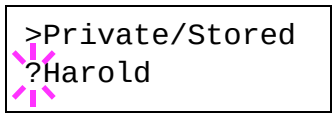
2. Press △ or ▽ repeatedly until `e-MPS >` appears.

3. Press ▷.

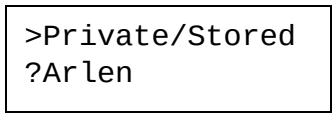
4. Press △ or ▽ repeatedly until `>Private/Stored` appears. The name entered in the printer driver (`Harold`, in this example) also appears.



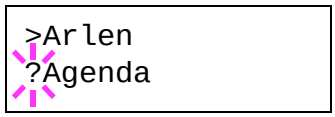
5. Press **[ENTER]**. A blinking question mark (?) appears before the user name.



6. Press △ or ▽ to display the desired user name (`Arlen`, in this example).

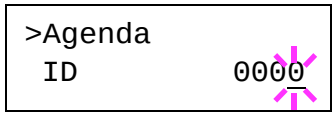


7. Press **[ENTER]**. The user name and the job name (`Agenda`, in this example) entered in the printer driver appear with a blinking question mark (?).



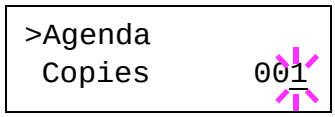
8. Press △ or ▽ to display the desired job title.

9 Press **[ENTER]**. The ID input line appears. Enter the four-digit access code entered in the printer driver and press **[ENTER]**.



To enter the ID, press ◁ or ▷ to move the cursor to the number to be changed and then enter the correct number by pressing △ or ▽.

10 You can set the number of copies to be printed. To increase the copy count, press △; to decrease the copy count, press ▽.



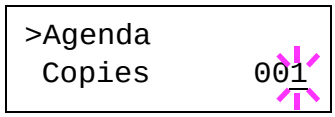
11 Press **[ENTER]** to finalize the copy count. The printer prints the specified number of copies for the job.

Deleting a Private/Stored Job

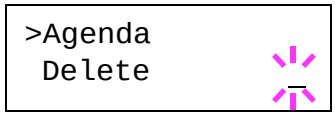
You can individually delete stored jobs by performing the following procedure. Jobs saved using Private Print will be automatically deleted if you turn the power off after printing, but jobs saved using Stored Job will not be deleted automatically.

1 Follow steps 1 through 8 in the above section.

2 When the title of the job to be printed is displayed (`Agenda`, in this example), press **[ENTER]**. Enter the four-digit access code entered in the printer driver and press **[ENTER]**.



3 Press ▽ repeatedly until `Delete` appears for the number of copies.



4 Press **[ENTER]**. The private job is deleted from the hard disk.

Printing a Code Job

To print a code job, ensure that the **NET for Clients** is installed on the computer. The **NET for Clients** is provided on the Software Library CD-ROM.

For details, refer to the *NET for Clients Operation Guide*.

Printing a List of Code Jobs

If you select Permanent Job Storage on the printer driver, you can print a List of Code Jobs using the operator panel.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `e-MPS >` appears.

```
e-MPS          >
```

3 Press ▷.

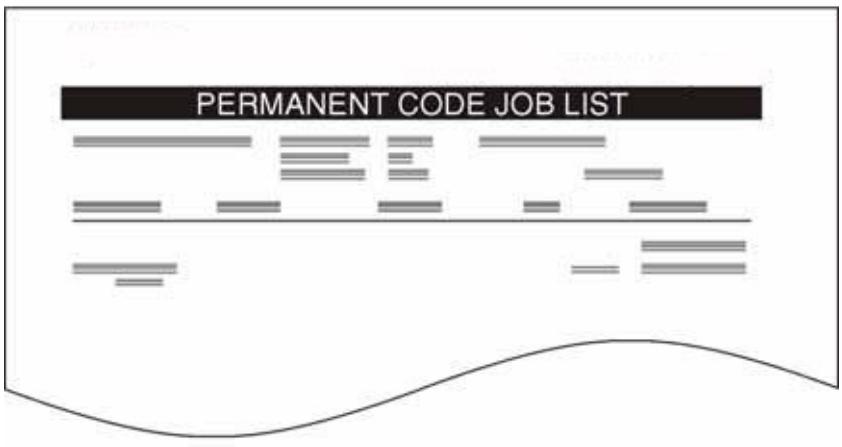
4 Press △ or ▽ repeatedly until `>List of Code JOB` appears.

```
>List of
 Code JOB
```

5 Press **[ENTER]**. A question mark (?) appears.

```
>List of
 Code JOB ?
```

6 Press **[ENTER]** again. The printer prints a Code Job list as shown below.



Retrieving Jobs from Virtual Mailbox (VMB)

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `e-MPS >` appears.

```
e-MPS          >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until `>Print VMB Data` appears. The virtual mailbox number will also appear.

```
>Print VMB Data
Tray001:
```

If you have named the virtual mailbox with an alias, the alias (`Richard`, in this example) will follow the number:

```
>Print VMB Data
Tray001:Richard
```

5 Press **[ENTER]**. A blinking question mark (?) appears.

```
>Print VMB Data
Tray001?Richard
```

6 Press **[ENTER]**. The document in the mailbox is printed and automatically deleted from the mailbox.

Printing a List of VMB

A Virtual Mailbox list includes the jobs currently stored in the mailboxes.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `e-MPS >` appears.

```
e-MPS          >
```

3 Press ▷.

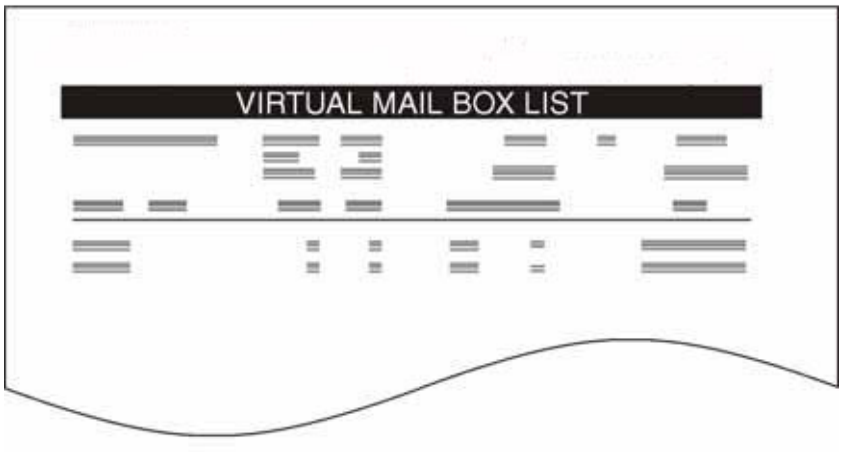
4 Press △ or ▽ repeatedly until `>List of VMB` appears.

```
>List of VMB
```

5 Press **[ENTER]**. A question mark (?) appears.

```
>List of VMB ?
```

6 Press **[ENTER]** again. The printer prints a list of jobs currently posted in the virtual mailboxes as shown in the following illustration.



Changing e-MPS Configuration

You can change the following parameters for e-MPS operation:

- Maximum number of Quick Copy/Proof-and-Hold jobs
- Maximum space assigned to temporary code jobs
- Maximum space assigned to permanent code jobs
- Maximum space assigned to virtual mailboxes

NOTE: The total amount of storage areas specified must not exceed the total size of the hard disk.

Changing the Maximum Number of Quick Copy/Proof-and-Hold Jobs

This changes maximum number of Quick Copy/Proof-and-Hold jobs from 0 to 50. The default is 32.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `e-MPS >` appears.

```
e-MPS          >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until `>e-MPS Configuration >` appears.

```
>e-MPS         >
 Configuration
```

5 Press ▷.

6 Press △ or ▽ repeatedly until >>Quick Copy appears.

```
>>Quick Copy
              32
```

7 Press **[ENTER]**. A blinking cursor (_) appears.

```
>>Quick Copy
              32
```

8 Press △ or ▽ to increase or decrease the value at the blinking cursor. The value can be set between 0 and 50. Use ▷ and ◁ to move the cursor right and left.

9 When the desired maximum number of jobs is set, press **[ENTER]**.

10 Press **[MENU]**. The display returns to Ready.

Maximum Space Assigned to Temporary Code Jobs

This changes the hard disk space that holds temporary code jobs. You can change the maximum space from 0 to 9999 (megabytes). The actual maximum size depends on the size of free hard disk space. The default size is 1/6 of the total hard disk space, rounded off in units of 50MB. For example, if the total hard disk space is 10GB, the default size is 1550MB.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until e-MPS > appears.

```
e-MPS          >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until >e-MPS Configuration > appears.

```
>e-MPS         >
 Configuration
```

5 Press ▷.

6 Press △ or ▽ repeatedly until >>Temp. Code JOB Size appears.

```
>>Temp. Code JOB
 Size     1550MB
```

7 To change the maximum disk space, press **[ENTER]**. A blinking cursor (_) appears.

```
>>Temp. Code JOB
 Size     1550MB
```

8 Press △ or ▽ to increase or decrease, respectively, the value at the blinking cursor. Use ▷ and ◁ to move the cursor right and left.

9 When the desired size is displayed, press **[ENTER]**.

10 Press **[MENU]**. The display returns to `Ready`.

Maximum Space Assigned to Permanent Code Jobs

This changes the hard disk space that holds permanent code jobs. You can change the maximum space from 0 to 9999 (megabytes). The actual maximum size depends on the size of free hard disk space. The default size is 1/6 of the total hard disk space, rounded off in units of 50MB. For example, if the total hard disk space is 10GB, the default size is 1550MB.

1 Press **[MENU]**.

2 Press △ or ▽ and select `e-MPS >`.

```
e-MPS          >
```

3 Press ▷.

4 Press △ or ▽ and select `>e-MPS Configuration >`.

```
>e-MPS         >
 Configuration
```

5 Press ▷.

6 Press △ or ▽ and select `>>Perm. Code JOB Size`.

```
>>Perm. Code JOB
 Size     1550MB
```

7 Press **[ENTER]**, the message display shows a blinking cursor (_).

```
>>Perm. Code JOB
 Size     1550MB
```

8 Press △ or ▽ to increase or decrease, respectively, the value at the blinking cursor. Use ▷and ◁ to move the cursor right and left.

9 When the desired size is displayed, press **[ENTER]**.

10 Press **[MENU]** and the display returns to `Ready`.

Maximum Space Assigned to Virtual Mailboxes (VMB)

This changes the hard disk space for virtual mailboxes. You can change the maximum space from 0 to 9999 (megabytes). The actual maximum size depends on the size of free hard disk space. The default size is 1/6 of the total hard disk space, rounded off in units of 50MB. For example, if the total hard disk space is 10GB, the default size is 1550MB.

1 Press **[MENU]**.

2 Press △ or ▽ and select `e-MPS >`.

```
e-MPS          >
```

3 Press ▷.

4 Press △ or ▽ and select `>e-MPS Configuration >`.

```
>e-MPS         >
 Configuration
```

5 Press ▷.

6 Press △ or ▽ and select `>>VMB Size`.

```
>>VMB Size
          1550MB
```

7 To change the maximum size, press **[ENTER]**. The message display shows a blinking cursor (_).

```
>>VMB Size
         1550MB
```

8 Press △ or ▽ to increase or decrease, respectively, the value at the blinking cursor. Use ▷ and ◁ to move the cursor right and left.

9 When the desired size is displayed, press **[ENTER]**.

10 Press **[MENU]** to exit the menu selection.

Changing the Interface Parameters

The printer is equipped with both parallel and USB interfaces. Optional serial interface board kit and network interface card can also be installed. Various printing environment parameters such as the default emulation can be changed independently on different interfaces by using the printer's menu selection system. Select the interface to apply the changes in the procedure described below.

NOTE: This interface selection described below does not select the interface from which data will be received. The printer automatically selects the interface.

Changing Parallel Interface Mode

The parallel interface supports a bi-directional/high-speed mode according to IEEE standards. Normally, this interface is used under the default setting `Auto`. For details, see *Parallel Interface on page 4-3*. After setting the interface, be sure to reset the printer or turn the power off at least once. The new setting will be enabled thereafter. You can select from the following:

- Auto (default)
- Nibble/high speed
- High speed
- Normal

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Interface >` appears.

3 If the interface is other than parallel, press **[ENTER]**. A blinking question mark (?) appears.

```
Interface
? Serial
```

4 Press △ or ▽ repeatedly until `Parallel` appears.

```
Interface
? Parallel
```

5 Press **[ENTER]** again. The question mark disappears.

6 To change the parallel interface mode, press ▷. The current communication mode appears.

7 To change the communication mode, press **[ENTER]**. A blinking question mark (?) appears.

```
>Parallel I/F
? Nibble (high)
```

8 Press △ or ▽ to scroll through the following communication modes:

- `Nibble (high)`
- `Auto`
- `Normal`
- `High Speed`

9 When the desired communication mode is displayed, press **[ENTER]**.

10 Press **[MENU]** to exit the menu selection.

Changing Serial Interface Parameters

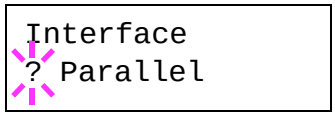
NOTE: This section applies to the printer having the optional serial interface board kit (IB-11) installed.

You can confirm or change the serial interface parameters including baud rate, data bits, stop bits, parity, and protocol. These parameters must match those of the computer's serial interface.

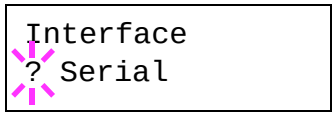
1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Interface >` appears.

3 If the interface is other than serial, press **[ENTER]**. A blinking question mark (?) appears.



4 Press △ or ▽ repeatedly until `Serial` appears.



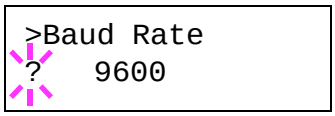
5 Press **[ENTER]** again.

6 Press ▷. One of the following serial parameters is indicated (`Baud rate` for example).

Pressing △ or ▽ toggles through the serial parameters as follows. To change the serial parameter, press **[ENTER]**. Use △ or ▽ to change the value or selection.

	Range
>Baud Rate 9600	1200, 2400, 4800, 9600 (Default), 19200, 38400, 57600, 115200
>Data Bits 8	7 or 8 (Default)
>Stop Bits 1	1 (Default) or 2
>Parity None	None (Default), Odd, Even, or Ignore
>Protocol DTR(pos.)&XON	DTR(pos.)& Xon (Default), DTR(positive), DTR(negative), XON/XOFF, or ETX/ACK

For example, to change baud rate from 9600 to 115200, display the baud rate menu following the above procedure. When the display shows baud rate, 9600 (bps), press **[ENTER]**. A blinking question mark (?) appears.



7 Press △ or ▽ to scroll through values. When 115200 is displayed, press **[ENTER]**. Press **MODE** to exit the menu selection.

NOTE: Some computers may not be able to handle a baud rate of 115200 bps. If you set the baud rate to 115200 and encounter communication problems, select a lower baud rate.

Changing Network Interface Parameters

This printer supports TCP/IP, NetWare and Appletalk protocols. In addition, you can install the optional network interface card in the option interface slot.

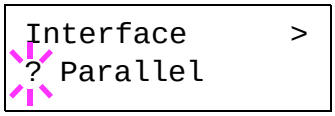
Using the operator panel, you can:

- Activate or deactivate TCP/IP, NetWare, and AppleTalk
- Activate or deactivate DHCP
- Enter IP address, subnet mask address, and default gateway address
- Determine whether to print a network status page when the printer is turned on

1 Press **[MENU]**.

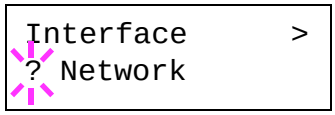
2 Press △ or ▽ repeatedly until `Interface >` appears.

3 If the current interface is other than network, press **[ENTER]**. A blinking question mark (?) appears.



If the optional network interface card is installed in the printer, `Option` will be displayed. The setting procedure is basically the same even in this case.

4 Press △ or ▽ repeatedly until `Network` appears.



5 Press **[ENTER]** again.

6 Press ▷. One of the following menus is indicated. To change settings for the item, press **[ENTER]**. Use △ or ▽ to change the value or selection.

Set this item to `On` when you connect to a network using NetWare. In submenu (>), frame mode can be selected from `Auto`, `802.3`, `Ethernet-II`, and `802.2`.

```
>NetWare        >
  On
```

Set this item to `On` when you connect to a network using TCP/IP. Submenu (>) has items including DHCP, BOOTP, IP address, subnet mask address, and gateway address. To resolve IP address for the network card, see *Resolving IP Address on page 2-33*.

```
>TCP/IP         >
  On
```

Appletalk must be activated (`On`) for networking with Macintosh computers.

```
>Appletalk
  Off
```

When the item is set to `On`, the printer prints out a network status page when it prints the printer status. See *Printing a Network Interface Status Page on page 2-35*.

```
>Network Status
 Page   Off
```

7 Activate the appropriate protocol that is required to connect the printer to the network. To activate a protocol, display the protocol, press **[ENTER]**, press △ or ▽ to change from `Off` to `On`, and press **[ENTER]**.

8 Press **[MENU]**. The display returns to `Ready`. You can print a network status page to confirm that the IP address, subnet mask address, and the gateway address have been properly set. To print a network status page, see *Printing a Network Interface Status Page on page 2-35*.

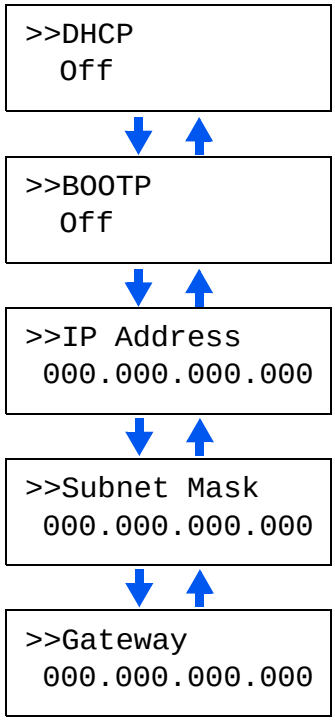
Resolving IP Address

To connect the printer to the network using TCP/IP protocol, you must set the IP address on the printer. The IP address must be unique to the printer and should be obtained from your network administrator.

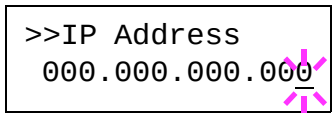
1 Activate TCP/IP protocol in the manner described above.

```
>TCP/IP         >
  On
```

2 Enter the submenu by pressing ▷. Each time you press △ or ▽, the selection changes.



3 When `>>IP Address` is displayed, press **[ENTER]**. A blinking cursor (_) appears at the last digit.



4 Press △ or ▽ to increase or decrease, respectively, the value at the blinking cursor. Use ▷ and ◁ to move the cursor right and left.

5 When the IP address is entered, press **[ENTER]**.

6 Press △ or ▽ to move to `Subnet Mask`. Perform the same procedure to complete entering the subnet mask address.

7 Then, press △ or ▽ to move to `Gateway`. Perform the same procedure to complete entering the gateway address.

8 Press **[MENU]**. The display returns to `Ready`. You can print a network status page to confirm that the IP address, subnet mask address, and the gateway address have been properly set. To print a network status page, see *Printing a Network Interface Status Page on page 2-35*.

Printing a Network Interface Status Page

You can have your printer print out a network status page when the printer prints the status page. The network status page shows the network addresses, and other information under various network protocols about the network interface card. The default setting is `Off` (print disable).

NOTE: Printing out a network interface status page may not be possible with the optional network interface card. For details, see the manual for the network interface.

1 Press **[MENU]**.

2 Press **[ENTER]** repeatedly until `Interface >` appears.

```
Interface      >
  Parallel
```

3 If the interface is other than network, press **[ENTER]**. A blinking question mark (?) appears.

```
Interface
? Parallel
```

4 Press △ or ▽ repeatedly until `Network` appears. Press **[ENTER]**.

```
Interface
? Network
```

5 Press ▷ and then press △ or ▽ repeatedly until the display shows `>Network Status Page`.

```
>Network Status
 Page   Off
```

6 The default setting is `Off`. If it is set to `On`, press **[ENTER]**. A blinking question mark (?) appears.

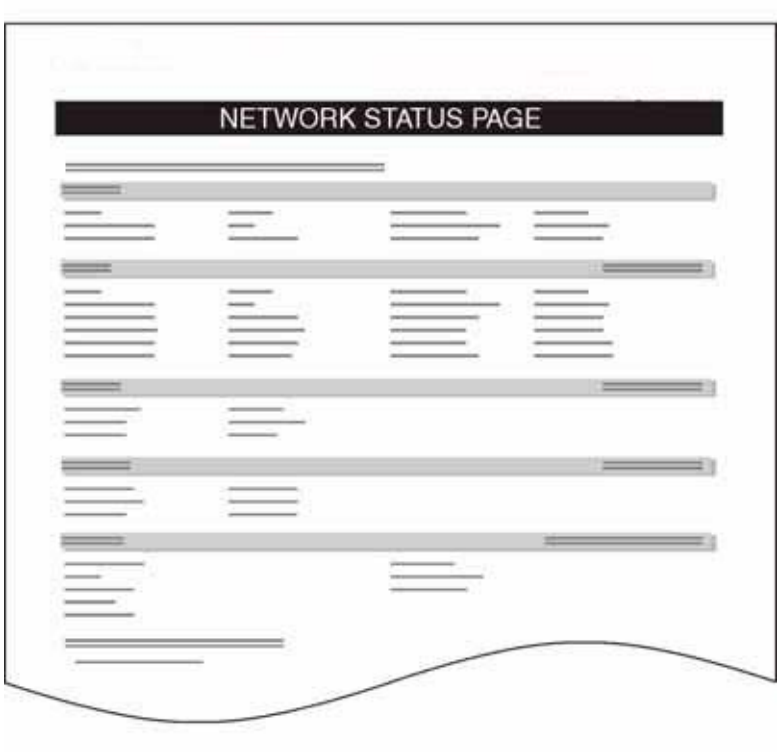
```
>Network Status
 Page ? Off
```

7 Press △ or ▽ to select `On`.

```
>Network Status
 Page ? On
```

8 Press **[ENTER]** again.

9 Press **[MENU]**. The display returns to Ready. The printer prints a network status page as an example shown in the following illustration.



Making Default Settings

Using the operator panel, you can set the default for the following items.

Default Emulation

You can change the emulation mode and character code set for the current interface. The printer is capable of the following emulation modes:

- HP PCL 6 (HP Color LaserJet 8550)
- KPDL3 (compatible with PostScript 3)

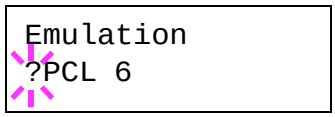
The printer can automatically switch between HP PCL 6 and KPDL3 depending on the print job that is received from the computer. To do this, select `KPDL (AUTO)` in the following procedure.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Emulation` > appears on the message display. One of the emulation modes appears, indicating the emulation currently in use.

`PCL 6` (default)
`KPDL`
`KPDL (AUTO)`

3 To change the default emulation, press **[ENTER]**. A blinking question mark (?) appears.



4 Press △ or ▽ repeatedly until the desired emulation mode is displayed.

5 Press **[ENTER]**.

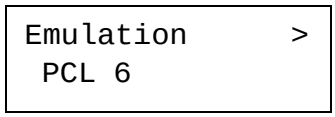
6 Press **[MENU]**. The display returns to `Ready`.

Printing KPDL Errors

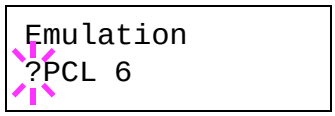
The printer can print error descriptions when printing error occurs during KPDL emulation. The default is `Off` — the printer does not print KPDL errors.

1 Press **[MENU]**.

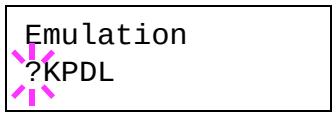
2 Press △ or ▽ repeatedly until `Emulation` > appears.



3 Press **[ENTER]**. A blinking question mark (?) appears.

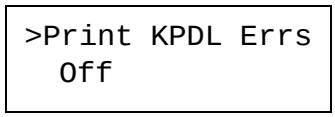


4 Select KPDL or KPDL (AUTO) using △ or ▽.



5 Press **[ENTER]**.

6 Press ▷. Press △ or ▽ until >Print KPDL Errs (errors) appears.



7 Press **[ENTER]**. A blinking question mark (?) appears.

8 Select On using △ or ▽. Press **[ENTER]**.

9 Press **[MENU]**. The display returns to Ready.

Default Font

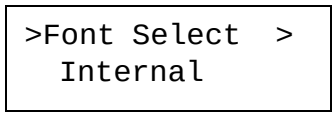
You can select the default font for the current interface. The default font can be one of the internal fonts or a font that is downloaded to the printer memory or stored on memory card or hard disk.

In this menu, you can also set the type and pitch for Courier and Letter Gothic; as well as to print a font list.

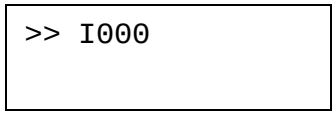
1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until Font > appears.

3 Press ▷. Press △ or ▽ until >Font Select > appears.



4 To select an internal font, make sure that Internal is displayed and press ▷. The display changes. If Internal is not displayed, press **[ENTER]**, then press △ or ▽ until it appears.



To select an optional font, press **[ENTER]** while >Font Select > is displayed. Press △ or ▽ repeatedly until Option appears and then press **[ENTER]**. Press ▷ next to display the font selection shown above. You can perform this operation only when optional fonts are installed in the printer.

The letter before the number indicates the location of the font, as shown below:

I	Internal font
S	Soft (downloaded) font
M	Fonts in optional memory card
H	Fonts in RAM disk or optional hard disk
O	Fonts in optional ROM (API)

5 Press **[ENTER]**. A blinking question mark (?) appears.

```
>>?I000
```

6 Press △ or ▽ repeatedly until the desired font number appears. For font numbers of the internal fonts, see *Printing Lists of Fonts on page 2-42*.

7 When the desired font is displayed, press **[ENTER]**.

8 Press **[MENU]**. The display returns to Ready.

Selecting Regular or Dark Courier/Letter Gothic

Courier or Letter Gothic font thickness can be selected as Regular or Dark. In the procedure below, it is assumed that Courier is selected. The procedure is the same for Letter Gothic.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until Font > appears.

```
Font                >
```

3 Press ▷. Press △ or ▽ until >Font Select > appears.

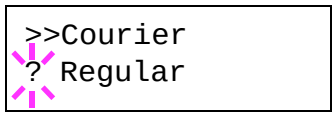
```
>Font Select  >
  Internal
```

4 Make sure that Internal is displayed and press ▷.

5 Press △ or ▽ repeatedly until >>Courier appears. If you are selecting the thickness of the Letter Gothic font, choose >> Letter Gothic here instead.

```
>>Courier
  Regular
```

6 Press **[ENTER]**. A blinking question mark (?) appears.



7 Select `Regular` or `Dark` using △ or ▽.

8 Press **[ENTER]**.

9 Press **[MENU]**. The display returns to `Ready`.

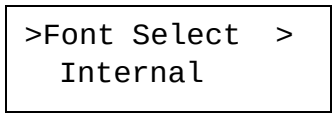
Changing the Default Font Size

You can change the size of the default font. If you selected a proportional font, the character size can also be changed.

1 Press **[MENU]**.

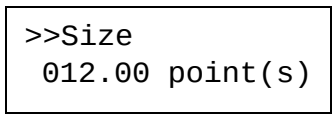
2 Press △ or ▽ repeatedly until `Font >` appears.

3 Press ▷. Press △ or ▽ until `>Font Select >` appears.

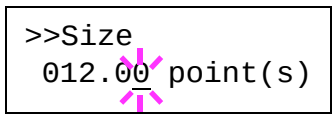


4 Make sure that `Internal` is displayed and press ▷.

5 Press △ or ▽ repeatedly until `>>Size` appears.



6 Press **[ENTER]**. A blinking cursor (_) appears.



7 Press △ or ▽ to increase or decrease the value at the blinking cursor. The font size can be set between 4 and 999.75 points, in 0.25-point increments. Use ▷ or ◁ to move the cursor right and left.

8 When the desired size is displayed, press **[ENTER]**.

9 Press **[MENU]**. The display returns to `Ready`.

Character Pitch for Courier/Letter Gothic

You can set the character pitch for fixed fonts when the default font is Courier or Letter Gothic.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Font >` appears.

```
Font                >
```

3 Press ▷. Press △ or ▽ until `>Font Select >` appears.

```
>Font Select  >
  Internal
```

4 Make sure that `Internal` is displayed and press ▷.

5 Press △ or ▽ repeatedly until `>>Pitch` appears.

```
>>Pitch
       10.00 cpi
```

6 Press **[ENTER]**. A blinking cursor (_) appears.

```
>>Pitch
       10.00 cpi
```

7 Press △ or ▽ to increase or decrease the value at the blinking cursor. The character pitch can be set between 0.44 and 99.99 characters per inch, in 0.01 character-per-inch increments. Use ▷ or ◁ to move the cursor right and left.

8 When the desired size is displayed, press **[ENTER]**.

9 Press **[MENU]**. The display returns to `Ready`.

Setting the Code Set

You can change the character code set. Available character code sets vary depending on the current font. (The default is `IBM PC-8`.)

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Font >` appears.

```
Font                >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until >Code Set appears.

```
>Code Set
 IBM PC-8
```

5 Press **[ENTER]**. A blinking question mark (?) appears.

```
>Code Set
?IBM PC-8
```

6 Press △ or ▽ until the desired character code set appears.

7 Press **[ENTER]**.

8 Press **[MENU]**. The display returns to Ready.

Printing Lists of Fonts

To help you decide in selecting a font, you can printout lists of the internal fonts or the optional fonts including downloaded fonts.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until Font > appears.

```
Font              >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until >List of Internal Fonts or >List of Option Fonts appears.

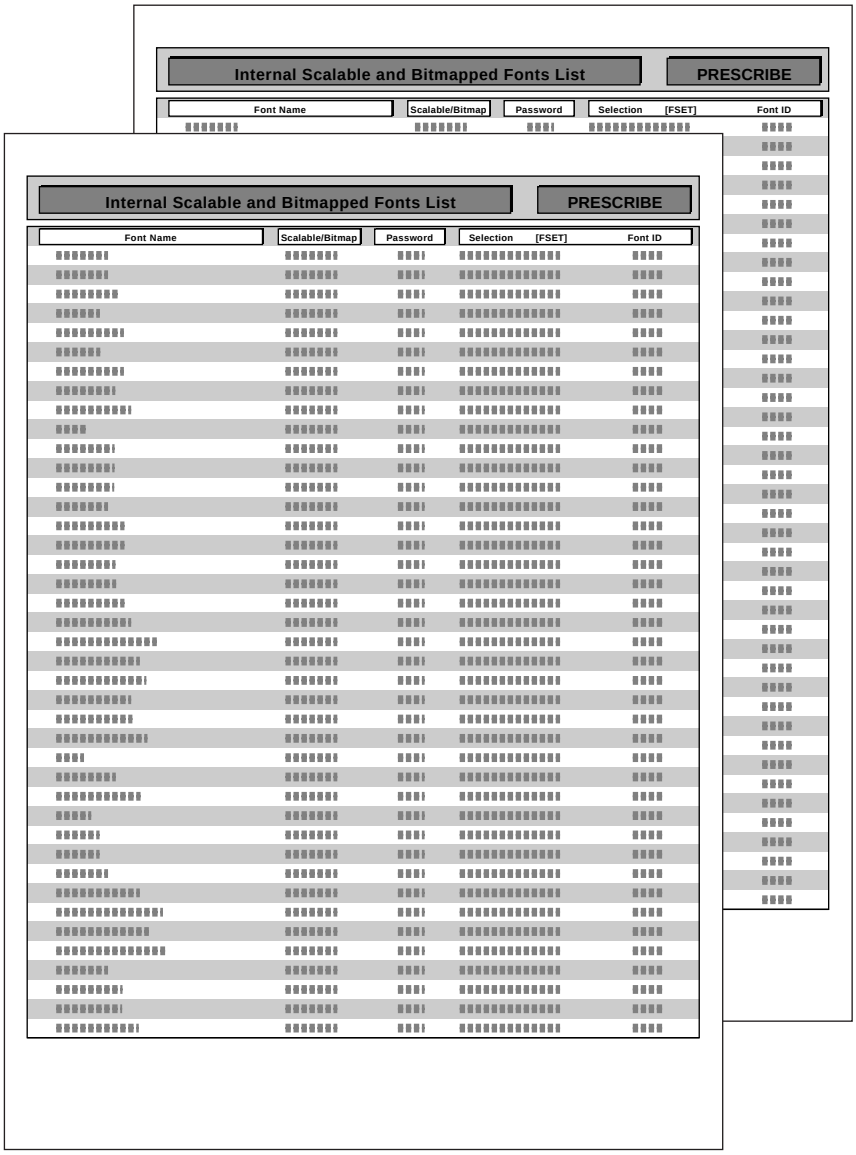
```
>List of
 Internal Fonts
```

5 Press **[ENTER]**. A question mark (?) appears.

```
>List of
 Internal Fonts?
```

6 Press **[ENTER]** again. Processing appears, then Ready. The printer prints out a list of fonts with a sample and font ID (number) for each of them. Sample lists of fonts are shown in the following illustration.

Samples of Fonts List



Pagination

In Page Set menus, you can set the number of copies, page orientation, and other settings regarding pagination.

Number of Copies

You can set the number of copies of each page to be printed for the current interface. The number of copies can be set between 1 and 999.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Page Set >` appears.

```
Page Set       >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until `>Copies` appears.

```
>Copies
              001
```

5 Press **[ENTER]**. A blinking cursor (_) appears.

```
>Copies
              001
```

6 Press △ or ▽ to increase or decrease, respectively, the value at the blinking cursor. Use ▷ and ◁ to move the cursor right and left.

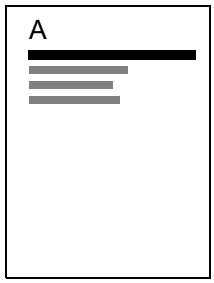
7 When the desired size is displayed, press **[ENTER]**.

8 Press **[MENU]**. The display returns to `Ready`.

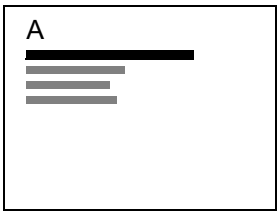
Print Orientation

You can select portrait (upright) or landscape (sideways) page orientation.

Portrait Orientation



Landscape Orientation



1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Page Set >` appears.

```
Page Set       >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until `>Orientation` appears.

```
>Orientation
  Portrait
```

5 Press **[ENTER]**. A blinking question mark (?) appears.

```
>Orientation
? Portrait
```

6 Select `Portrait` or `Landscape` using △ or ▽.

7 Press **[ENTER]**.

8 Press **[MENU]**. The display returns to `Ready`.

Page Protect Mode

The Page Protect Menu does not normally appear, however, `Page Protect` will be forcibly set to `On` if a print overrun error occurs because the print job is too complex. When this has happened, be sure to reset `Page Protect` to `Auto` (default) in order to maintain the optimum use of printer memory.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Page set >` appears.

```
Page set       >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until `>Page Protect` appears.

```
>Page Protect
  On
```

5 Press **[ENTER]**. A blinking question mark (?) appears.

```
>Page Protect
? On
```

6 Press △ or ▽ repeatedly until `Auto` appears.

7 Press **[ENTER]**.

8 Press **[MENU]**. The display returns to `Ready`.

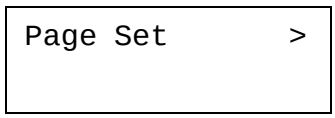
Linefeed (LF) Action

This procedure instructs the printer what to do when it receives a linefeed code (0AH).

- `LF only`: Linefeed is performed (Default).
- `CR and LF`: A linefeed and carriage return are performed.
- `Ignore LF`: The linefeed is ignored.

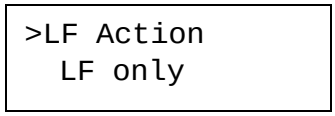
1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Page Set >` appears.

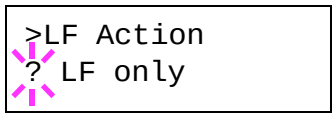


3 Press ▷.

4 Press △ or ▽ repeatedly until `>LF Action` appears.



5 Press **[ENTER]**. A blinking question mark (?) appears.



6 Press △ or ▽ repeatedly until the desired linefeed action appears.

7 When the desired action is displayed, press **[ENTER]**.

8 Press **[MENU]**. The display returns to `Ready`.

Carriage-Return (CR) Action

This procedure instructs the printer what to do when it receives a carriage-return code (0DH).

- `CR only`: A carriage-return is performed (Default).
- `CR and LF`: A linefeed and carriage return are performed.
- `Ignore CR`: The carriage-return is ignored.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Page Set >` appears.

```
Page Set       >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until `>CR Action` appears.

```
>CR Action
  CR only
```

5 Press **[ENTER]**. A blinking question mark (?) appears.

```
>CR Action
?CR only
```

6 Press △ or ▽ repeatedly until the desired carriage-return action appears.

7 When the desired action is displayed, press **[ENTER]**.

8 Press **[MENU]**. The display returns to `Ready`.

Wide A4 Pitch

Turn this to On to increase the maximum number of characters that can be printed in a line for an A4 page (78 characters at 10 pitch) and Letter size page (80 characters at 10 pitch). This setting is only effective in PCL 6 emulation.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Page set >` appears.

```
Page Set       >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until >Wide A4 appears.

```
>Wide A4
  Off
```

5 Press **[ENTER]**. A blinking question mark (?) appears.

```
>Wide A4
?Off
```

6 Select On or Off using △ or ▽.

7 Press **[ENTER]**.

8 Press **[MENU]**. The display returns to Ready.

Setting Print Quality

The printer features the Print Quality menu which lets you select the intensity of tone mode (Normal or Fine) and gloss mode (Low or High).

Tone Mode

Tone Mode selects the way the printer handles a pixel for representing the color and halftoning for each pixel - Normal or Fine. The Fine tone mode uses four-bit smooth halftone for photographs, images etc.; and the Normal tone mode uses a two-bit halftone for text, solid objects etc. Either of these tone modes consistently affects all objects on a page.

The Fine tone mode provides a print quality better than Normal, but the printing speed is slower and more memory is required.

NOTE: The amount of memory actually required may vary depending on the data to print.

1 Press **[MENU]**.

Press △ or ▽ repeatedly until Print Quality > appears.

```
Print Quality  >
```

2 Press ▷.

3 Press △ or ▽ repeatedly until >Tone appears.

```
>Tone
  Normal
```

4 To change the toner mode, press **[ENTER]**. A blinking question mark (?) appears.

```
>Tone
?Normal
```

5 Press △ or ▽ to change to Fine.

6 Press **[ENTER]** to finalize the selection.

7 Press **[MENU]**. The display returns to Ready.

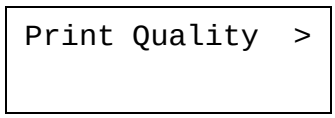
Gloss Mode

Gloss mode, when set to `High`, increases the effect of glossiness in printing by reducing the printing speed by half. Gloss mode is not available when `Transparency` is selected as the paper type setting.

NOTE: Depending on the paper used, printing in gloss mode may cause wrinkle in paper. To reduce wrinkle, try using thicker paper.

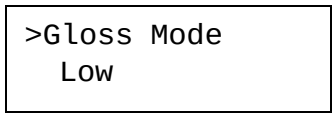
1. Press **[MENU]**.

2. Press △ or ▽ repeatedly until `Print Quality >` appears.

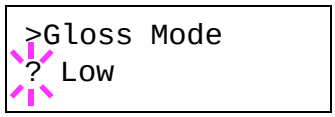


3. Press ▷.

4. Press △ or ▽ repeatedly until `>Gloss Mode` appears.



5. To change the gloss mode, press **[ENTER]**. A blinking question mark (?) appears.



6. Press △ or ▽ to change from `Low` to `High`.

7. Press **[ENTER]** to finalize the selection.

8. Press **[MENU]**. The display returns to `Ready`.

Operating the Storage Device

The printer supports three types of storage device; memory card, optional hard disk, and RAM disk. The memory card and optional hard disk are installed into the dedicated slots of the printer. The RAM disk is an allocated part of the printer's memory. If the optional hard disk is installed in the printer, the e-MPS function will be available. For details, see *e-MPS on page 2-18*.

The basic operations of each storage device are the same. This section explains the operation of the memory card.

Using the Memory Card

The printer is equipped with a slot for a memory card. By inserting a memory card into the printer, the following operations become available.

- Reading Font Data
- Reading Data
- Writing Data
- Deleting Data
- Formatting Memory Card
- Printing a List of Data Names

For details about the handling of the memory card, see *Memory Card on page 3-6*.

Reading Font Data

If a memory card with the font data card is inserted into the slot when the printer is turned on, the fonts are automatically read into the printer.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Memory Card` > appears.

```
Memory Card    >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until >`Read Fonts` appears.

```
>Read Fonts
```

5 Press **[ENTER]**. A question mark (?) appears.

```
>Read Fonts ?
```

6 Press **[ENTER]**. `Processing` appears and the reading of data from the memory card starts. When completed, `Processing` disappears.

```
>Read Fonts
Processing
```

7 Press **[MENU]**. The display returns to `Ready`.

Reading Data

You can print out the data in the memory card.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Memory Card >` appears.

```
Memory Card    >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until `>Read Data` appears (`Report`, in this example).

```
>Read Data
 Report
```

5 Press **[ENTER]**. A blinking question mark (?) appears before the data name.

```
>Read Data
?Report
```

6 Press △ or ▽ to display the desired data name.

7 Press **[ENTER]**. `Processing` appears and the reading of data from the memory card starts.

Writing Data

Data can be written to a memory card until the card is full. When writing to a memory card, a name is assigned to the file automatically. You can use the procedure explained in the section *Printing a List of Data Names (Partitions) on page 2-56* to print a list of data names for confirmation.

NOTE: First check that the memory card is properly formatted. Otherwise, the `>Write Data` message to be explained below will not be shown on the message display. If the memory card inserted in the memory card slot is not formatted, `>Format` will automatically appear on the message display. Format the memory card. See *Formatting a Memory Card on page 2-55*.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Memory Card` > appears.

```
Memory Card    >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until `>Write Data` appears.

```
>Write Data
```

5 Press **[ENTER]**. A question mark (?) appears.

```
>Write Data ?
```

6 Press **[ENTER]**. `Processing` appears, then `Waiting`.

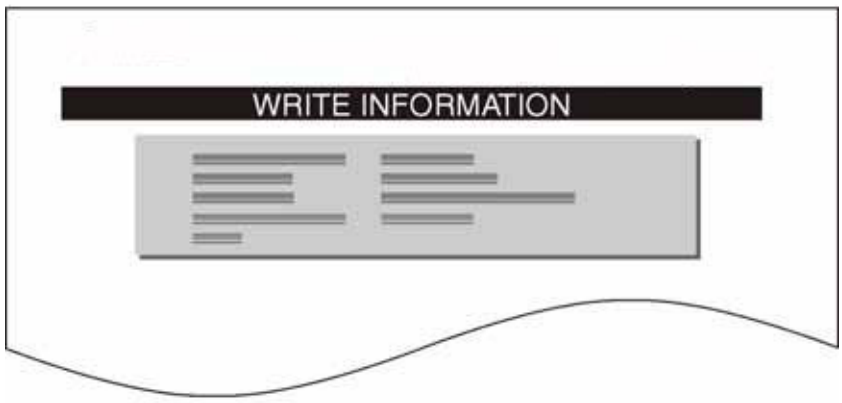
7 Send the file from the computer to the printer.

As the printer receives data, the message display changes to `Processing`, then when the end of the data is received, the message display changes to `Waiting`.

8 Check that the message display has changed to Waiting, then press **[GO]**. This writes the file to the memory card and instructs the printer to automatically print out a memory card write information page as shown below.

The file is written onto the memory card given a destination name (also referred to as a partition name) which the printer automatically assigns one

after another as follows: DataS001 (first data), DataS002 (second data), DataS003 (third data)...



The write information page includes the following items:

Item	Description
Partition Type	Type of data written (currently only type 2 is supported).
Partition Name	The destination name of data written to the card.
Write Partition Length	The size of the written data on the memory card.
Others	Error information.

When the memory card write information page is printed, the display returns to `Ready`.

9 Repeat above steps until you have transferred all data (files) that you want to write to the memory card. Each time you finish writing data, a memory card write information page is printed from the printer showing the information, but pertaining only to the data just written. To see all data contained in the memory card at once, print a list of data names as explained. See *Printing a List of Data Names (Partitions) on page 2-56*.

Deleting Data

It is possible to use the printer to delete data from a memory card.

Check that the memory card contains data. Otherwise, the `>Delete Data` menu will not appear on the message display.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Memory Card >` appears.

```
Memory Card    >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until >Delete Data appears. The data name also appears (Report, in this example).

```
>Delete Data
 Report
```

5 Press **[ENTER]**. A blinking question mark (?) appears before the data name.

```
>Delete Data
?Report
```

6 Press △ or ▽ to display the desired data name.

7 Press **[ENTER]**. Processing appears and the data is deleted from the memory card. The display returns to Ready.

Formatting a Memory Card

A new memory card must be formatted before it can be used in the printer. Formatting allows data to be written to the memory card.

NOTE: Formatting will destroy any existing data on a storage device including a used memory card.
Formatting of the memory card must be executed from the printer.

When a new memory card is inserted in the printer's slot, Format error Memory card will appear on the message display.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until Memory Card > appears.

```
Memory Card    >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until >Format appears.

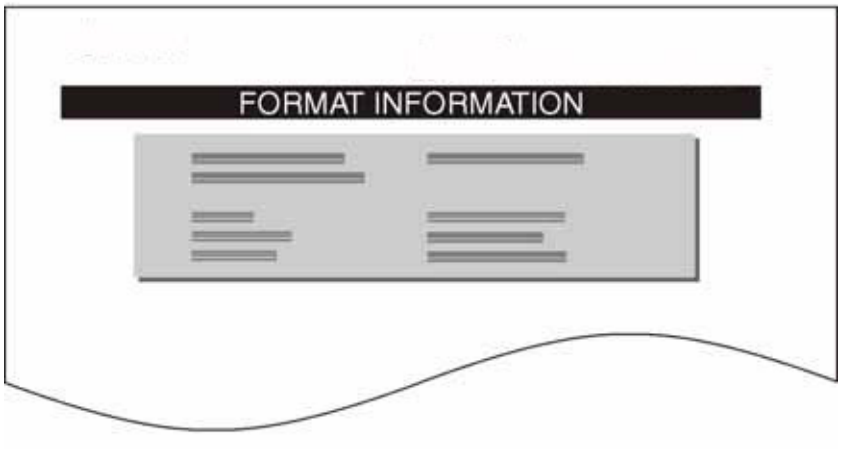
```
>Format
```

5 Press **[ENTER]**. A question mark (?) appears.

```
>Format ?
```

6 Press **[ENTER]**. Processing appears and formatting of the memory card starts.

When the formatting is successfully completed, the printer automatically prints out a format information page, which allows you to check the memory card for proper formatting.



Format information page includes the following items:

Item	Description
Capacity	The total size of the memory card.
Used Space	The size the printer uses for its system.
Free Space	The size remaining in the memory card for storing data.

When the memory card format information is printed, the display returns to `Ready`.

Printing a List of Data Names (Partitions)

The printer prints a list of all data names (referred to as partitions) stored in a memory card for reference. (Printing a list is also available for a font card.)

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Memory Card >` appears.

```
Memory Card    >
```

3 Press ▷.

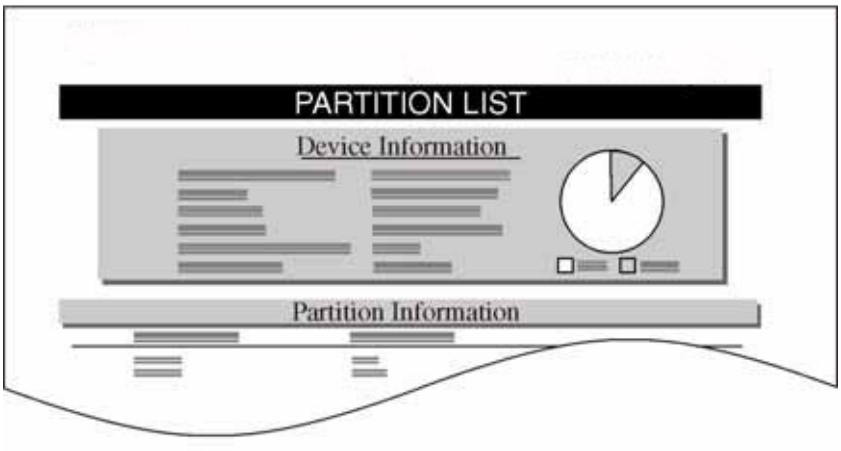
4 Press △ or ▽ repeatedly until `>List of Partitions` appears.

```
>List of
 Partitions
```

5 Press **[ENTER]**. A question mark (?) appears.

```
>List of
 Partitions ?
```

6 Press **[ENTER]**. `Processing` appears and the printing of the list starts.



The printout (example above) includes the following information:

Item	Description
Device Name/Number	MEMORY CARD/A is indicated for the memory card.
Capacity	The total capacity of the memory card in kilobytes.
Used Space	The total size of the data stored in the memory card in kilobytes.
Free Space	The size of the capacity remaining in the memory card for storing further data, including the amount of memory that the printer uses for its system.
Partition Name	The name of the written data assigned automatically by the printer.
Partition Size	The size of the written data in bytes.
Partition Type	The type of the written data i.e., whether it is host data (Data) or font data (Font).

When the list of file names (partition list) for the memory card is printed, the display returns to `Ready`.

Using the Optional Hard Disk

Installing the optional hard disk into the printer allows you to perform the following operations on the hard disk.

- Reading data
- Writing data

- Deleting data
- Formatting hard disk
- Printing a list of data names (partitions)

When an optional hard disk is inserted into the printer for the first time, it must be formatted before use. If the optional hard disk is not formatted, the `>Format` menu will automatically appear on the message display.

The operations of the optional hard disk are the same as those of the memory card. See the relevant sections in *Using the Memory Card on page 2-51*.

When data is written to the hard disk, the name automatically given to the corresponding file will be DataH001 (for the 1st file), DataH002 (for the 2nd file), DataH003 (for the 3rd file), etc.

Using the RAM Disk

The RAM disk is a memory space shared within the printer memory that can temporarily store print jobs. The stored print job can then be used to print multiple copies of the job reducing the total amount of time required to print the whole job. It acts similar to the hard disk except that the data is effective only when the printer is powered up.

To use the RAM disk, activate and enter the desired size of the RAM disk in the manner described below. The maximum RAM disk size can be calculated as follows:

Maximum RAM disk size = Total printer memory -36MB

For example, if the total memory installed in your printer is 256MB, you can set 220MB of RAM disk. If you attempt to set the RAM disk size beyond this restriction, the printer automatically rounds it down so that the size is always 36MB less than the total printer memory. Once the RAM disk size is set, the printer must be reset.

To activate RAM disk in the printer's memory, first you must set the RAM disk mode to On and set the desired data size for the RAM disk as described in the following section. This allows you to perform the following operations on the RAM disk.

- Reading data
- Writing data
- Deleting data
- Printing a list of data names (partitions)

The operations of the RAM disk are the same as those of the memory card. See the relevant sections in *Using the Memory Card on page 2-51*. When data is written to the RAM disk, the name automatically given to the corresponding file will be DataH001 (for the 1st file), DataH002 (for the 2nd file), DataH003 (for the 3rd file), etc.

NOTE: The RAM disk can not be used when an optional hard disk is installed.
The RAM disk stores data only temporarily. When the printer is reset or turned off, the stored data will be erased.
The RAM disk is allocated within the printer's memory available to users. If the size of the RAM disk is set too large, the printing speed may decrease or the memory may become insufficient.

Setting the RAM Disk Size

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `RAM Disk Mode` appears.

```
RAM Disk Mode
  Off
```

3 Press **[ENTER]**. A blinking question mark (?) appears. Press △ or ▽ to select `On`. Press **[ENTER]**.

```
RAM Disk Mode
? On
```

4 Press ▷. Press △ or ▽ repeatedly until `>RAM Disk Size` appears. The data size also appears.

```
>RAM Disk Size
      0119 MByte
```

5 Press **[ENTER]**. A blinking cursor (_) appears. Press △ or ▽ to display the desired size. Definable RAM disk size is `0001` to `1024`.

```
>RAM Disk Size
      0119 MByte
```

This range varies depending on the total memory size of the printer. The setting exceeding this range is automatically adjusted to the maximum RAM disk size.

6 When the desired RAM disk size is displayed, press **[ENTER]**.

7 Press **[MENU]**. The display returns to `Ready`. Turn the printer off and then on again. The selected RAM disk size is activated after the printer is restarted.

Paper Handling

This section explains how to change mode for the MP tray, the paper size and type for each paper source, and how to select the paper source and paper destinations.

MP Tray Mode

The MP tray can be used in either of two modes — `Cassette` or `First`. The MP tray feed paper differently depending on the mode:

- Cassette Mode (default)

  The MP tray acts in the same manner as other paper sources. The printer can feed paper from any paper source you command on the printer driver. The cassette mode provides a faster printing speed than the first mode.

- First Mode

  The MP tray automatically feeds paper placed on the MP tray overriding another paper source that is selected on the printer driver. After all sheets in the MP tray have been used up (approximately 100 sheets), paper will be fed from the paper source originally selected. This mode is convenient to feed paper of special size or type without reloading the current paper source. However, the MP tray must be kept empty if you desire to feed paper from the intended paper source.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Paper Handling >` appears.

```
Paper Handling >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until `>MP Tray Mode` appears.

```
>MP Tray Mode
  Cassette
```

5 Press **[ENTER]**. A blinking question mark (?) appears.

```
>MP Tray Mode
?Cassette
```

6 Press △ or ▽ to change `Cassette` to `First`.

7 Press **[ENTER]**. The MP tray mode is changed.

8 To exit the menu selection, press **[MENU]**.

Setting MP Tray Paper Size

When you use the MP tray in cassette mode, you should set the MP tray size to the paper size that is used to format the job to print. If the sizes do not match, printing will not be performed on the correct size paper. The default setting is `Letter` size for the U.S. and Canada and `A4` for other countries. For more information about the paper sizes that you can feed from the MP tray, see *Paper Specifications on page 1-2*.

NOTE: Feeding the paper having a paper size which does not match the current paper size from the MP tray can cause paper jam.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Paper Handling >` appears.

```
Paper Handling >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until `>MP Tray Size` appears. In this example, the current MP tray paper size is `A4`.

```
>MP Tray Size
  A4
```

5 To change the paper size, press **[ENTER]**. A blinking question mark (?) appears.

6 Press △ or ▽ to display the desired paper size. The message display toggles through the following paper sizes:

```
A4
Executive
Letter
Legal
Custom
Hagaki
OufukuHagaki
Oficio II
Statement
Folio
Youkei 2
Youkei 4
16K
Env. Monarch
Envelope #10
Envelope #9
Envelope #6
Envelope DL
Envelope C5
A6
B6
```

```
A5
B5
ISO B5
```

7 When the desired paper size is displayed, press **[ENTER]**. The paper size is set for the MP tray.

8 To exit the menu selection, press **[MENU]**.

Setting the MP Tray Paper Type

By setting a paper type (plain, recycled, etc.) for the MP tray, you can select the paper on the MP tray according to the paper type you command on the printer driver. The default setting is plain paper.

For more information about paper types that can be fed from the MP tray, see *Paper Availability on page 1-2*.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Paper Handling >` appears.

```
Paper Handling >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until `>MP Tray Type` appears.

```
>MP Tray Type
  Plain
```

5 To change paper type, press **[ENTER]**. A blinking question mark (?) appears.

```
>MP Tray Type
? Plain
```

6 Press △ or ▽ to display the desired paper type. The message display toggles through the following paper types:

```
Plain
Transparency
Preprinted
Labels
Bond
Recycled
Vellum
Rough
Letterhead
Color
Prepunched
Envelope
Cardstock
Coated
```

```
Thick
High quality
Custom 1(to 8)
```

7 When the desired paper type is displayed, press **[ENTER]**. The paper type is set to the MP tray.

8 To exit the menu selection, press **[MENU]**.

Setting the Cassette Paper Size

To set the standard sizes A5, A4, B5, Letter, and Legal size for the paper cassette, load the paper and turn the paper size dial so that the size of the paper you are going to use appears in the paper size window (see *Loading Paper on page 1-13*).

Custom paper size

If you use a non-standard size paper, load the paper and turn the paper size dial to **OTHER** (see *Loading Paper on page 1-13*).

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Paper Handling >` appears.

```
Paper Handling >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until `>Cassette Size >` appears.

If optional paper feeders are added, `Cassette 1 Size` will appear for the standard paper cassette and `Cassette 2 Size`, `Cassette 3 Size`, and `Cassette 4 Size` will appear for the optional paper feeders.

```
>Cassette Size >
  Custom
```

5 Press **[ENTER]**. A blinking question mark (?) appears.

```
>Cassette Size
? Custom
```

6 Press △ or ▽ to display the desired paper size. The message display toggles through the following paper sizes:

```
Custom
Oficio II
Folio
16K
Envelope C5
A5
B5
ISO B5
```

```
A4
Executive
Letter
Legal
```

7 When the desired paper size is displayed, press **[ENTER]**. The paper size is set for the paper cassette.

If you selected `Custom` in step 6, be sure to set the unit of measurement and the dimensions of the paper as described in the following sections.

8 Select the units of measurement as described in the next section.

Selecting the Unit of Measurement

1 Press ▷.

2 Press △ or ▽ repeatedly until `>>Unit` appears. The unit of measurement can be selected between millimeters and inches. The current unit of measurement is displayed (the default setting is `mm`).

```
>>Unit
  mm
```

3 Press **[ENTER]**. A blinking question mark (?) appears.

```
>>Unit
?mm
```

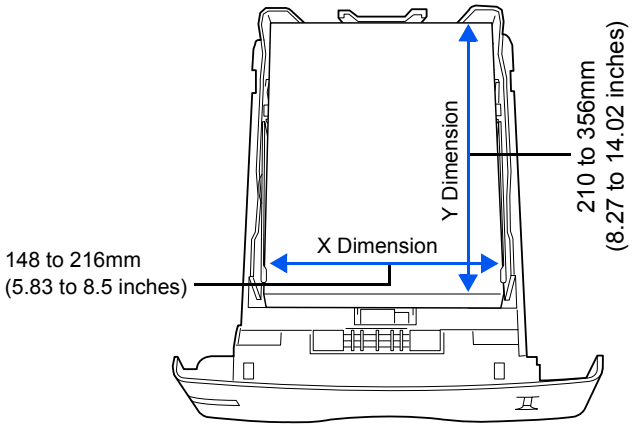
4 Select `mm` or `inch` using △ or ▽.

5 Press **[ENTER]**.

Set the dimensions of the paper as described in the next section.

Entering the Width and Length

1 Enter the paper size for `X Dimension` and `Y Dimension` as shown in the figure.



2 When the unit of measurement is set, press ▽.
`>>X Dimension` appears (the paper width setting).

```
>>X Dimension
          216 mm
```

3 Press **[ENTER]**. A blinking cursor (_) appears.

```
>>X Dimension
          21_6 mm
```

4 Press △ or ▽ to increase or decrease the value of the figure where the cursor is blinking and display the desired width. The width can be set between `148` and `216` mm (`5.83` to `8.5` inches). You can use ◁ or ▷ to move the cursor right and left.

5 Display the paper width and press **[ENTER]**.

6 When the width is set, press. `>>Y Dimension` appears (the paper length setting). Set the desired length in the same way as the width. The length can be set between `210` and `356` mm (`8.27` to `14.02` inches).

7 Display the paper length, press **[ENTER]**.

8 Press **[MENU]**. The display returns to `Ready`.

9 To print using the custom size set above, define the same custom size on the printer driver. For details, see *KX Printer Drivers Operation Guide*.

Setting the Cassette Paper Type

By setting a paper type (plain, recycled, etc.) for the paper cassette, you can automatically select the paper in the paper cassette according to the paper type you command on the printer driver. The default setting is plain paper for all paper cassettes.

For more information about paper types that you can feed from the paper cassette, see *Paper Specifications on page 1-2*.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Paper Handling >` appears.

```
Paper Handling >
```

3 Press ▷.

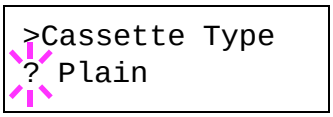
4 Press △ or ▽ repeatedly until `>Cassette Type` appears.

If optional paper feeders are added, `Cassette 1 Type` will appear for the standard paper cassette and `Cassette 2`

```
>Cassette Type
  Plain
```

Type, Cassette 3 Type, and Cassette 4 Type will appear for the optional paper feeders.

5 To change paper type, press **[ENTER]**. A blinking question mark (?) appears.



6 Press △ or ▽ to display the desired paper type. The message display toggles through the following paper types:

Plain
Preprinted
Bond
Recycled
Rough
Letterhead
Color
Prepunched
High quality
Custom 1 (to 8)

7 When the desired cassette type is displayed, press **[ENTER]**.

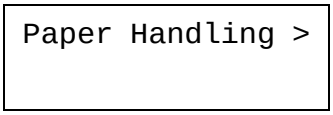
8 To exit the menu selection, press **[MENU]**.

Selecting the Paper Feed Source

You can select the paper source, from which the printer feeds paper as the default. If an optional paper feeder(s) is installed, it is also available for the default paper source.

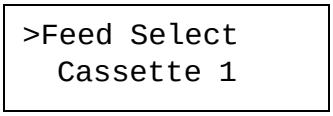
1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until Paper Handling > appears.

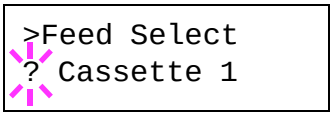


3 Press ▷.

4 Press △ or ▽ repeatedly until >Feed Select appears.



5 To change the current paper feed source, press **[ENTER]**. A blinking question mark (?) appears.



6 Press △ or ▽ to display the desired paper feed source. The message display toggles through the following paper feed sources, depending on

the installed optional paper feeders (from the top most paper cassette to the bottom paper cassette):

```
MP tray
Cassette 1
Cassette 2
Cassette 3
Cassette 4
```

`Cassettes 2`, 3 and 4 are available for selection when the optional paper feeders are installed.

7 When the desired paper source is displayed, press **[ENTER]**.

8 To exit the menu selection, press **[MENU]**.

Duplex Printing

Using the optional duplexer, you can automatically print on both sides of the paper. The duplexer is mounted underneath the printer.

Duplex printing is available for the following paper types:

```
Plain
Preprinted
Bond
Recycled
Rough
Letterhead
Color
Prepunched
High quality
```

Activating the duplexer is done by selecting either short edge or long edge binding mode.

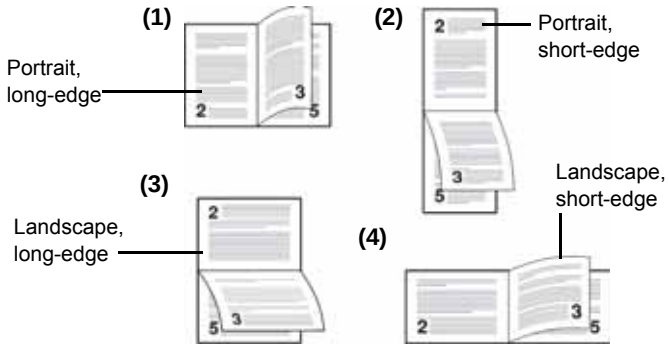
NOTE: To use this function, the optional duplexer must be installed on the printer.
Duplex printing can be also performed from the MP tray. When the MP tray is set to First Mode (First), the paper size and paper type will be the same as those of the paper cassette currently set at the paper feed source. If the paper to be fed from the MP tray does not match the paper size and paper type of the current paper feed source cassette, a paper jam may occur.

Binding Modes

Binding refers to the manner in which printed pages of paper are joined together (by gluing, stitching, etc.) in book form. The two possible types of binding are: long-edge binding, in which pages are joined together along their long edge; and short-edge binding, in which they are joined together along their short edge. In selecting a binding type, you must also consider

the orientation of the printed page. You can use long-edge or short-edge binding with either landscape or portrait printing.

Depending on the binding type and print orientation, the duplexer provides four types of binding. These are: (1) portrait, long-edge, (2) portrait, short edge, (3) landscape, long-edge, and (4) landscape, short-edge. The figure below shows these binding methods.



This procedure can only be performed when the optional duplexer is installed.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Paper Handling >` appears.

```
Paper Handling >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until `>Duplex Mode` appears.

```
>Duplex Mode
 None
```

5 To activate duplex printing, press **[ENTER]**. A blinking question mark (?) appears.

```
>Duplex Mode
?None
```

6 Press △ or ▽ to display the desired binding mode. The message display toggles through the following:

`None` (default)
`Short edge bind`
`Long edge bind`

7 When the desired binding mode is displayed, press **[ENTER]**. The binding mode is set.

8 To exit the menu selection, press **[MENU]**.

Overriding Difference between A4 and Letter

When the Override A4/LT is turned on using the operator panel, the printer ignores the difference between A4 and Letter paper sizes. Printing is performed without an error message even if the actual paper size in the current cassette differs from the paper size formatting the job.

By default, this feature is off.

1. Press **[MENU]**.

2. Press △ or ▽ repeatedly until Paper Handling > appears.

```
Paper Handling >
```

3. Press ▷.

4. Press △ or ▽ repeatedly until >Override A4/LT appears.

```
>Override A4/LT
  Off
```

5. To change overriding mode, press **[ENTER]**. A blinking question mark (?) appears.

```
>Override A4/LT
? Off
```

6. Press △ or ▽ to change Off to On.

7. Press **[ENTER]**. The overriding mode is set.

8. To exit the menu selection, press **[MENU]**.

Creating Custom Paper Type

The following describes the procedure used to set a user-defined paper type for the printer. Eight custom user settings may be registered. After having been set, any of these may be called up when setting the paper type for a paper source.

The paper weight and duplex path can be set (see *Setting the Paper Weight on page 2-71*, and *Setting the Duplex Path on page 2-71*) after selecting the paper type to be customized as follows. For how to reset the customized settings, see *Resetting the Custom Paper Type on page 2-72*.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Paper Handling >` appears.

```
Paper Handling >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until `>Type Adjust >` appears.

```
>Type Adjust   >
  Custom 1
```

5 Press **[ENTER]**. A blinking question mark (?) appears.

```
>Type Adjust
? Custom 1
```

6 Press △ or ▽ to display the desired paper type. The display changes as shown below.

```
Custom 1 (to 8)
Plain
Transparency
Preprinted
Labels
Bond
Recycled
Vellum
Rough
Letterhead
Color
Prepunched
Envelope
Cardstock
Coated
Thick
High quality
```

7 When the paper type to be customized is displayed, press **[ENTER]**.

8 Press ▷ and proceed to Setting the Paper Weight.

Setting the Paper Weight

You can set the paper thickness for your custom paper type to be customized.

1 Display the custom paper type (see *Creating Custom Paper Type on page 2-70*) and press ▷.

2 Press △ or ▽ repeatedly until >>Paper Weight appears.

```
>>Paper Weight
  Normal 1
```

3 Press **[ENTER]**. A blinking question mark (?) appears.

```
>>Paper Weight
?Normal 1
```

4 Press △ or ▽ to display the desired paper thickness. The display changes as shown below. For details of the default setting for each paper type, see *Paper Availability on page 1-2*.

```
Light
Normal 1
Normal 2
Normal 3
Heavy 1
Heavy 2
Heavy 3
Extra Heavy
```

5 When the desired paper thickness is displayed, press **[ENTER]**.

6 Press **[MENU]**. The display returns to Ready.

If the optional duplexer is installed on the printer, duplex printing can be enabled and disabled. See *Setting the Duplex Path on page 2-71* on the following page.

Setting the Duplex Path

NOTE: To use this function, the optional duplexer must be installed on the printer.

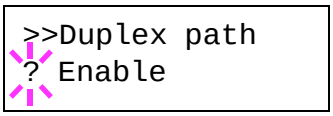
If the optional duplexer is installed on the printer, you can set whether or not to enable duplex printing as follows. The default setting is Enable.

1 Display the custom paper type (see *Creating Custom Paper Type on page 2-70*) and press ▷.

2 Press △ or ▽ repeatedly until >>Duplex path appears.

```
>>Duplex path
  Enable
```

3 Press **[ENTER]**. A blinking question mark (?) appears.



4 Select `Enable` or `Disable` using △ or ▽. For details of the default setting for each paper type, see *Paper Availability on page 1-2*.

5 Press **[ENTER]**.

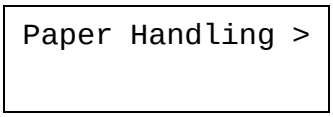
6 Press **[MENU]**. The display returns to `Ready`.

The custom paper type setting is completed.

Resetting the Custom Paper Type

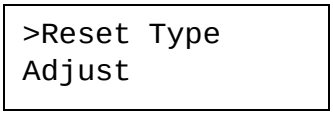
1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Paper Handling >` appears.

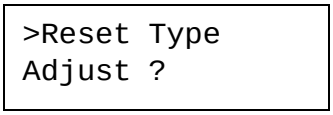


3 Press ▷.

4 Press △ or ▽ repeatedly until `>Reset Type Adjust` appears.



5 To reset all custom paper types, press **[ENTER]**. A question mark (?) appears.



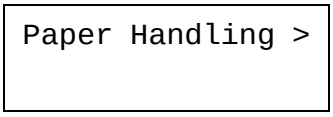
6 Press **[ENTER]**. All customized paper types will be reset to the default. The display returns to `Ready`.

Selecting the Output Stack

The Stack Select menu on the operator panel allows you to select either the face-down tray or the face-up tray option for the output stack.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Paper Handling >` appears.



3 Press ▷.

4 Press △ or ▽ repeatedly until >Stack Select appears.

```
>Stack Select
 Top tray FaceDn
```

5 To change the output stack, press **[ENTER]**. A blinking question mark (?) appears.

```
>Stack Select
?Top tray FaceDn
```

6 Press △ or ▽ select output stack - Top tray FaceDn or Rear tray FaceUp.

7 When the desired output stack is displayed, press **[ENTER]**.

Selecting Monochrome or Color Printing

You can use the Color Mode menu on the operator panel to select the Monochrome or Color printing mode. By default, the printer is set to print in color mode.

1. Press **[MENU]**.

2. Press △ or ▽ repeatedly until `Color Mode` appears.

```
Color Mode
  Color
```

3. To change color mode, press **[ENTER]**. A blinking question mark (?) appears.

```
Color Mode
? Color
```

4. Press △ or ▽ to change color mode — `Color` or `Monochrome`.

5. When the desired color mode is displayed, press **[ENTER]**. Color mode is changed.

6. To exit the menu selection, press **[MENU]**.

Reading Life Counters

You can display the total number of pages printed by your printer whenever it is necessary. The total number of printed pages can also be checked on the status page. See *Printing a Status Page on page 2-15*. For proper maintenance scheduling, you need to reset the toner counter using this menu each time a new toner container is installed.

Displaying the Total Printed Pages

This procedure displays the total number of printed pages. You cannot change the displayed value.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Life Counters >` appears.

```
Life Counters  >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until `>Printed Pages` and the latest total print count is shown.

```
>Printed Pages
         0123456
```

5 To exit the menu selection, press **[MENU]**.

Resetting the Toner Counter

The toner containers must be replaced when the printer displays the `Low toner` or `Replace toner` message which will be given depending on the color of toner. The `Low toner` message will be shown as a pre-warning that the toner is running out and the printer will soon stop, at that time showing `Replace toner`. If you replace the toner container before `Replace toner` is displayed, you must manually reset the toner counter as explained below.

Note that if you reset the toner counter before the toner container is replaced, the subsequent toner warnings will not be indicated correctly.

1 Replace the toner container according to the message given on the message display. To replace the toner containers, see the *Maintenance* section of the *Basic Operation Guide*.

2 Press **[MENU]**.

3 Press △ or ▽ repeatedly until `Life Counters >` appears.

```
Life Counters  >
```

4 Press ▷.

5 Press △ or ▽ repeatedly until the message display shows the toner container of the color you replaced — [C]yan, [M]agenta, [Y]ellow, or black[K]. For example, to reset the Cyan toner counter, display >New Toner [C] Installed.

6 Press **[ENTER]**. A question mark (?) appears.

```
>New Toner [C]
 Installed ?
```

7 Press **[ENTER]**. The toner counter is reset.

Other Modes

The following modes can be accessed in the `Others` submenu:

- Message Language
- Automatic Form Feed Timeout Setting
- Sleep Timer Setting
- Received Data Dumping
- Printer Resetting
- Resource Setting
- Alarm (Buzzer) Setting
- Auto Error Clear Setting
- Duplex Printing Error Detection Setting
- Color Registration
- Service Menu (for service technician)
- Color Calibration

Selecting the Message Language

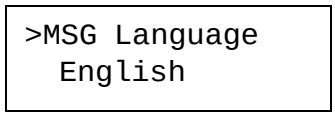
You can select the language of the message display by following the procedure given below. You can optionally download messages in other languages. Contact your service technician for information.

1 Press **[MENU]**.

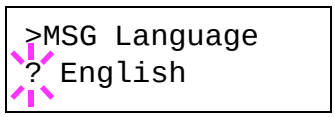
2 Press △ or ▽ repeatedly until `Others >` appears.

3 Press ▷.

4 Press △ or ▽ repeatedly until >MSG `Language` appears. The default message language is `English`.



5 To change the language, press **[ENTER]**. A blinking question mark (?) appears.



6 Press △ or ▽. The display cycles through the available selection in the following order:

```
English
Francais
Deutsch
Italiano
Nederlands
```

```
Español
Português
```

7 Press **[ENTER]**.

8 Press **[MENU]**. The display returns to `Ready`.

Automatic Form Feed Timeout Setting

If the printer receives no data for a certain period, it will time out and release the current interface. It prints whatever data it has in its buffer and feeds out the page. The default form feed timeout time is 30 seconds.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Others >` appears.

```
Others          >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until `>Form Feed Time Out` appears.

```
>Form Feed
Time Out 030sec.
```

5 To change the timeout time, press **[ENTER]**. A blinking cursor (_) appears.

```
>Form Feed
Time Out 030sec.
```

6 Press △ or ▽ to increase or decrease the value at the blinking cursor and set the desired time. The timeout time can be between `0` and `495` seconds, in 5-second increments. Use ▷ and ◁ to move the cursor right and left.

7 When the desired timeout time is displayed, press **[ENTER]**.

8 To exit the menu selection, press **[MENU]**.

Setting the Sleep Timer

The printer has a sleep timer that is used to conserve power when the printer is not printing, processing, or receiving data.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Others >` appears.

```
Others          >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until >Sleep Timer > appears.

```
>Sleep Timer   >
        015 min.
```

5 Press ▷ and display >>Auto Sleep.

```
>>Auto Sleep
  On
```

6 To turn off the sleep timer, press **[ENTER]**. A blinking question mark (?) appears.

```
>>Auto Sleep
? On
```

7 Press △ or ▽ to change On to Off.

```
>>Auto Sleep
? Off
```

8 Press **[ENTER]**. The sleep timer is turned off.

9 To exit the menu selection, press **[MENU]**.

Sleep Timer Timeout Time

You can adjust the length of time the printer waits before entering Auto Sleep in the absence of data. The default time is 15 minutes.

The printer reverts to normal operation mode when the printer receives a print job, the operator panel is operated, or one of the exterior covers is opened.

NOTE: Color calibration is automatically executed before the printer reverts to normal operation mode.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until Others > appears.

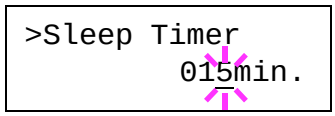
```
Others          >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until >Sleep Timer > appears.

```
>Sleep Timer   >
         015min.
```

5 To change the timeout time, press **[ENTER]**. A blinking cursor (_) appears.



6 Press △ or ▽ to increase or decrease the value at the blinking cursor and set the desired time. The timer can be set between 5 and 240 min, in 5-minute increments. Use ▷ and ◁ to move the cursor right and left.

7 When the desired timeout time is displayed, press **[ENTER]**.

8 To exit the menu selection, press **[MENU]**.

Received Data Dump

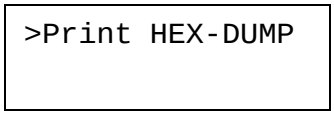
You can print data received by the printer as hexadecimal code for debugging programs and files.

1 Press **[MENU]**.

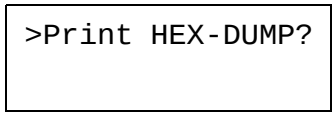
2 Press △ or ▽ repeatedly until `Others >` appears.

3 Press ▷.

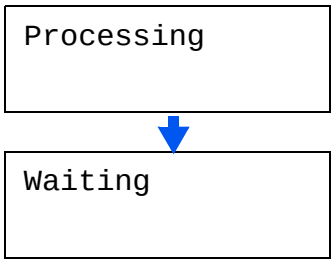
4 Press △ or ▽ repeatedly until `>Print HEX-DUMP` appears.



5 Press **[ENTER]**. A question mark (?) appears.



6 Press **[ENTER]** again. The message `Processing` appears for a second, followed by `Waiting`.



7 While the message display is indicating `Waiting` (for 30 seconds by default), send data to be hex-dumped to the printer. The message display indicates `Processing` while the data is being received.

You can cancel printing of any more dump data by pressing **[GO]** and then **[CANCEL]**.

8 Once all data has been received, the message `Waiting` will appear. Press **[GO]** to finish hex-dump printing.

Printer Resetting

The procedure described below resets the printer's temporary conditions, such as the current page orientation, font, etc., set by commands to their default values. Downloaded fonts and macros are deleted from the printer's memory.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Others >` appears.

```
Others          >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until `>Restart Printer` appears.

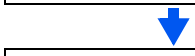
```
>Restart
 Printer
```

5 To reset the printer, press **[ENTER]**. A question mark (?) appears.

```
>Restart
 Printer?
```

6 Press **[ENTER]** again. `Self test` appears while the printer is resetting itself, followed by `Please wait` and then `Ready`.

```
Self test
```



```
Please wait
```

```
Ready
```

Resource Protection

By default, when you switch from the PCL 6 emulation to another, all downloaded fonts and macros will be lost. Resource protection preserves these PCL resources in memory so that they remain intact even when you have switched back in PCL 6.

NOTE: Resource protection requires extra memory to store the downloaded fonts and macros. The total size of the printer memory recommended for using the resource protection option is affected by several factors. See *Expansion Memory Modules on page 3-3*.

By default, resource protection is deactivated.

1. Press **[MENU]**.
2. Press △ or ▽ repeatedly until `Others >` appears.

```
Others          >
```

3. Press ▷.
4. Press △ or ▽ repeatedly until `>Resource Prot.` appears.

```
>Resource Prot.
  Off
```

5. Press **[ENTER]**. A blinking question mark (?) appears.

```
>Resource Prot.
? Off
```

6. Press △ or ▽ to select `Permanent` or `Perm / Temp` (Permanent/Temporary) for resource protection.
7. When the desired resource protection is displayed, press **[ENTER]**.
8. To exit the menu selection, press **[MENU]**.

Alarm (Buzzer) Setting

You can set an alarm sound in addition to the message displayed when the paper supply is exhausted, or when paper jamming occurs. This setting is useful, for example, when the printer is located some distance from the user.

The audio alarm is set to `On` when leaving the factory. If the alarm is set to `Off`, it will not sound.

1. Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Others >` appears.

```
Others          >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until `Buzzer` appears.

```
>Buzzer
  On
```

5 Press **[ENTER]**. A blinking question mark (?) appears.

```
>Buzzer
? On
```

6 Select `On` or `Off` using △ or ▽.

7 Press **[ENTER]**.

8 To exit the menu selection, press **[MENU]**.

Auto Error Clear Setting

If an error that still allows you to continue printing occurs, the next received data is automatically printed after a set period of time elapses. For example, if the printer is shared over a network as a network printer and one person causes one of the above errors, after the set period of time elapses, the data sent from the next person is printed. The default setting is `Off` (Auto Error Clear disabled). The auto clear errors are:

- Memory overflow
- Print overrun
- KPDL error
- File is not found
- RAM disk error
- Memory card error
- Hard disk error
- Duplex printing is disabled
- e-MPS job is not stored
- Multiple copies are not printed

NOTE: For setting the auto error clear recovery time, see the next section.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Others >` appears.

```
Others          >
```

3 Press ▷

4 Press △ or ▽ repeatedly until `>Auto Error Clear >` appears.

```
>Auto Error     >
 Clear    Off
```

5 Press **[ENTER]**. A blinking question mark (?) appears.

```
>Auto Error
 Clear ? Off
```

6 Select `On` or `Off` using △ or ▽.

7 Press **[ENTER]**.

8 To exit the menu selection, press **[MENU]**. The display returns to `Ready`.

Setting the Error Clear Time

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Others >` appears.

```
Others          >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until `>Auto Error Clear >` appears.

```
>Auto Error     >
 Clear    On
```

5 Press ▷ and display `>>Error Clear Timer`. The default setting is `30` seconds.

```
>>Error Clear
 Timer    030sec.
```

6 Press **[ENTER]**. A blinking cursor (_) appears.

```
>>Error Clear
 Timer    030sec.
```

7 Press △ or ▽ to increase or decrease the value at the blinking cursor and set the desired time. The time must be set between `000` and `495` seconds, in 5-second increments. If set to `000`, printing will be continued

immediately without any time interval. You can use ▷ and ◁ to move the cursor right and left.

8 Display the desired time and press **[ENTER]**.

9 Press **[MENU]**. The display returns to `Ready`.

Duplex Printing Error Detection Setting

If the error detection setting for duplex printing has been turned `On`, and you attempt to print onto a paper size and paper type that cannot be used for duplex printing, the `Duplex disabled Press GO` error message will be displayed and printing will stop. To print onto one-side of the paper only when this message is displayed, press **[GO]**. The default setting is `Off`.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Others >` appears.

```
Others          >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until `>Finishing Error >` appears.

```
>Finishing    >
 Error
```

5 Press ▷ and display `>>Duplex`.

```
>>Duplex
  Off
```

6 Press **[ENTER]**. A blinking question mark (?) appears.

```
>>Duplex
?Off
```

7 Press △ or ▽ to change `Off` to `On`.

```
>>Duplex
?On
```

8 Press **[ENTER]**.

9 To exit the menu selection, press **[MENU]**.

Color Registration

When using the printer for the first time after set-up or after having moved it, or if printout of any color (cyan, magenta or yellow) is skewed, use this mode to correct the color registration on the operator panel.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Others >` appears.

```
Others          >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until `>Color Registration >` appears.

```
>Color          >
 Registration
```

5 Press ▷.

6 Press △ or ▽ repeatedly until `>>Print Regist Chart` appears.

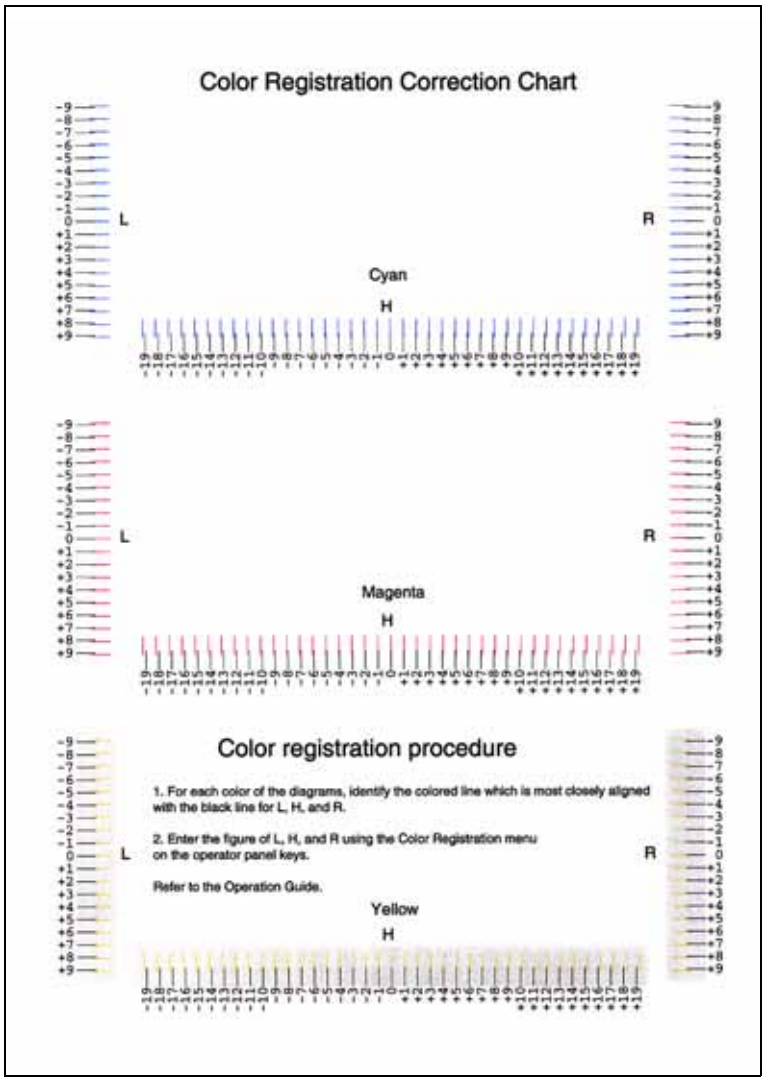
```
>>Print
 Regist Chart
```

7 Press **[ENTER]**. A question mark (?) appears.

```
>>Print
 Regist Chart ?
```

8 Press **[ENTER]**. `Processing` appears and a color registration correction chart is printed out. There are left (L), horizontal (H) and right (R) registration charts for each color (cyan, magenta and yellow) included on the color registration correction chart.

Sample Color Registration Correction Chart


Color Registration Correction Chart
L
R
Cyan
H
L
R
Magenta
H
Color registration procedure
1. For each color of the diagrams, identify the colored line which is most closely aligned with the black line for L, H, and R.
2. Enter the figure of L, H, and R using the Color Registration menu on the operator panel keys.
Refer to the Operation Guide.
L
R
Yellow
H

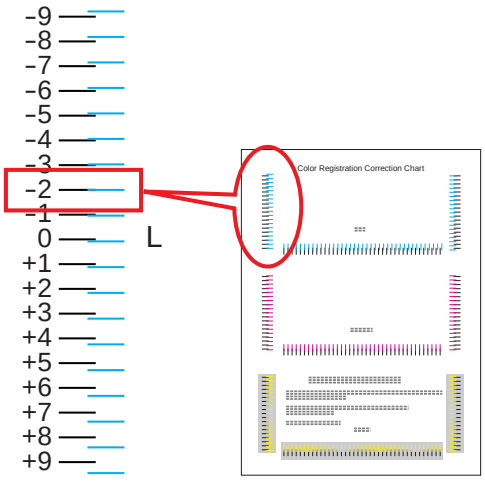
9 Press △ or ▽ repeatedly until >>Adjust Cyan appears.

```
>>Adjust Cyan
 L=   H=    R=
```

10 Press **[ENTER]**. 0 or 00 will be displayed for each value and the cursor will flash under the left (L) value.

```
>>Adjust Cyan
 L= 0 H= 00 R= 0
```

11 Look at the left chart (L) in the cyan portion of the color registration correction chart. Find the two lines that most seem to overlap as a single straight line and note the number value listed there. In the example below the value would be -2. (Be careful of plus [+] and minus [-] numbers.)



12 Press △ or ▽ until that value is displayed.

```
>>Adjust Cyan
 L=-2 H= 00 R= 0
```

13 Use ▷ and ◁ to move the cursor right and left. Perform the same operation as you did for the left (L) value in order to find the horizontal (H) and right (R) values for cyan in the color registration correction chart, and select those values on the operator panel as well.

14 Press **[ENTER]**. OK? and each of the entered values will be displayed. If the displayed values are correct, press **[ENTER]**.

```
OK?
 L=-2 H= 00 R=+1
```

15 Press ▽. >>Adjust Magenta will be displayed and, once you complete the settings for that color, >>Adjust Yellow will be displayed. Perform the same operation as you did for the cyan chart in order to find the values for magenta and yellow in the color registration correction chart, and perform those settings in the same way.

16 Once you have completed the settings for all 3 colors, press **[MENU]**. The display returns to Ready.

NOTE: If the problem of skewed-color printout still persists even after correcting the color registration, call for service.

Printing the Service Status Page

The service status page contains printer settings information that is more detailed than the standard status page and is therefore mostly for service purposes. However, there is a great deal of information on the service status page that may be useful to you.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Others >` appears.

```
Others          >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until `>Service >` appears.

```
>Service        >
```

5 Press ▷.

6 Press △ or ▽ repeatedly until `>>Print Status Page` appears.

```
>>Print
 Status Page
```

7 Press **[ENTER]**. A question mark (?) appears.

```
>>Print
 Status Page ?
```

8 Press **[ENTER]**. The display indicates `Processing` and printing starts.

Color Calibration

This printer contains a calibration function that automatically makes adjustments to compensate for changes that occur over time due to variations in the ambient temperature and humidity. So that the highest quality color printing can be maintained, this color calibration operation is carried out automatically each time the power to the printer is turned on. The color calibration operation may be carried out automatically during recovery from the Auto Sleep or during printing.

1 Press **[MENU]**.

2 Press △ or ▽ repeatedly until `Others >` appears.

```
Others       >
```

3 Press ▷.

4 Press △ or ▽ repeatedly until >Service > appears.

```
>Service       >
```

5 Press ▷.

6 Press △ or ▽ repeatedly until >>Color Calibration appears.

```
>>Color
 Calibration
```

7 To let the printer perform color calibration, press **[ENTER]**. A question mark (?) appears to let you confirm the execution of calibration.

```
>>Color
 Calibration ?
```

8 Press **[ENTER]**. The message display shows Please wait (Calibrating) and calibration will start.

```
Please wait
(Calibrating)
```

9 When calibration is finished, the display returns to Ready.

3 Options

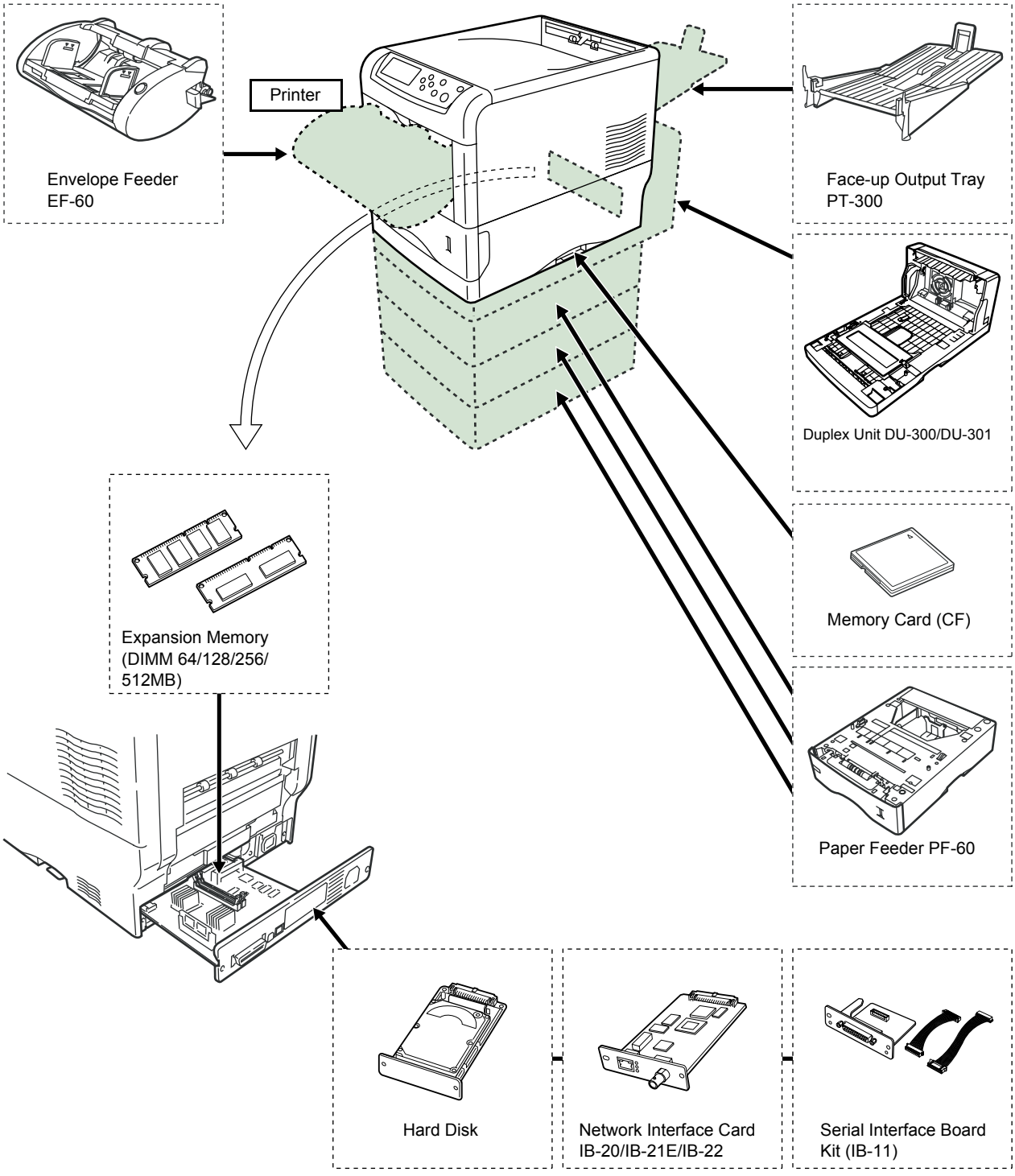
This chapter contains explanations on the following topics:

- General Information..... 3-2
- Expansion Memory Modules 3-3
- General Description of Options 3-6
- IB-20/IB-21E/IB-22 Network Interface Cards 3-10

For availability of the options, consult your service technician.

General Information

The CLP 3416 printer has the following options available to satisfy your printing requirements. For instructions on installing individual options, refer to the documentation included with the option. Some options are explained in the following sections.



Expansion Memory Modules

To expand the printer memory for more complex print jobs and faster print speed, you can plug in optional memory modules (dual in line memory modules) in two memory slots provided on the printer main controller board. You can select additional memory modules from 64, 128, 256 or 512MB. The maximum memory size is 1024MB (512MB x 2).

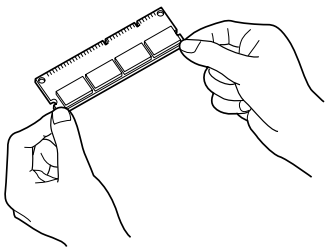
A 128MB memory module is already installed at the factory. To expand memory up to 1024MB, remove the 128MB memory module and install two 512MB memory modules.

NOTE: The expansion memory should only be installed by your service technician. We shall not be liable for any damages caused by improper installation of expansion memory.

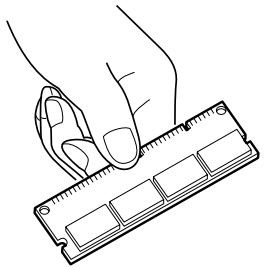
Precautions for handling the printer's main controller board and memory modules

To protect electronic parts, discharge static electricity from your body by touching a water pipe (faucet) or other large metal object before handling the memory modules. Or, wear an antistatic wrist strap, if possible, when you install the memory modules.

Always hold the main controller board or a memory module by its edges as shown below to avoid damaging electronic parts.



YES

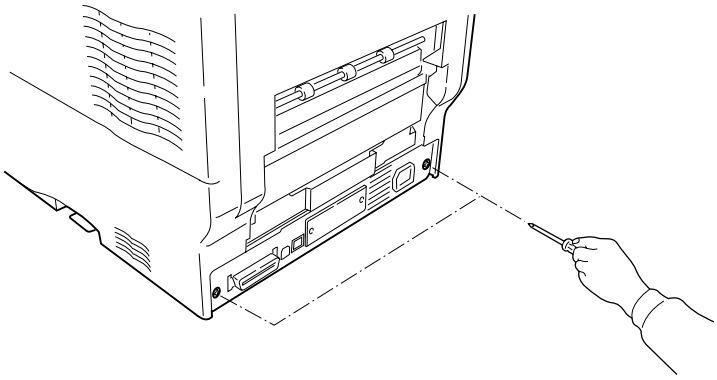


NO

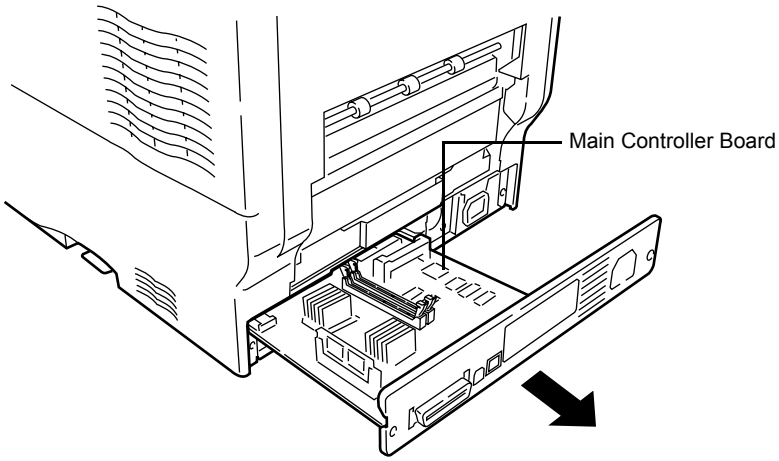
Installing the Memory Modules

1 Power off the printer and unplug the printer power cord.

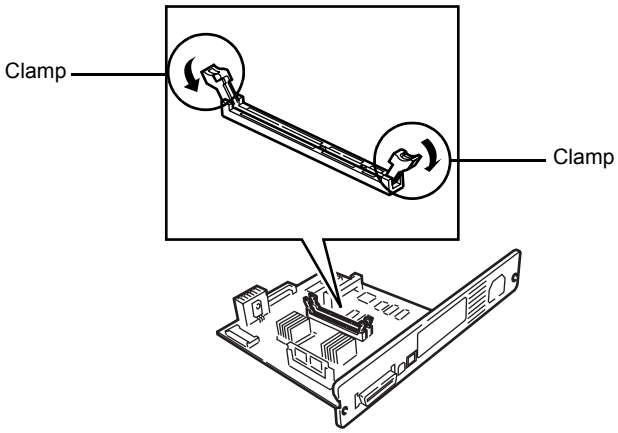
2 Unscrew two screws at the back of the main controller board.



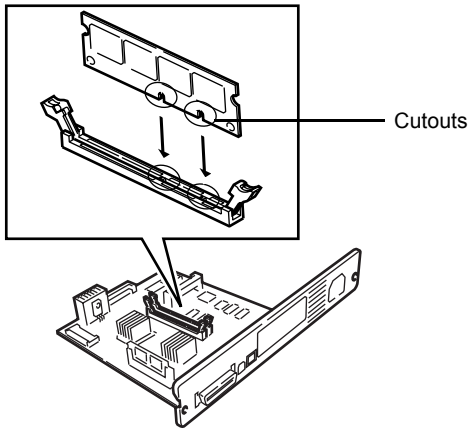
3 Pull out the main controller board gently.



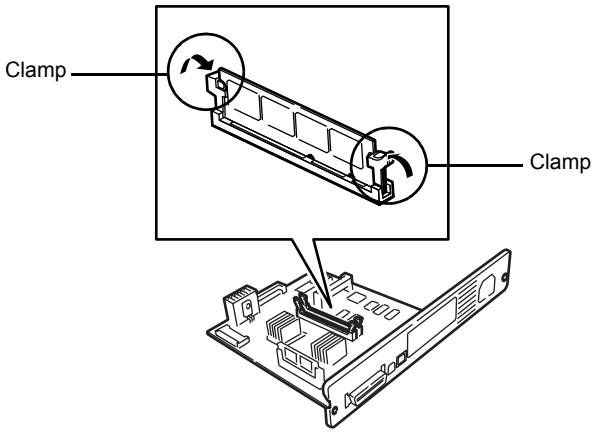
4 Push out the clamps on both ends of the memory socket on the main controller board.



5 Remove the memory module from its package. Aligning the cutouts of the memory module with the matching keys of the socket, carefully plug the memory module into the memory socket until it clicks in place.



6 Push down the two socket clamps to secure the memory modules.



7 After you finish installing the memory modules, reinstall the main controller board and fasten it with screws.

Removing a Memory Module

To remove a memory module, remove the main controller board, then carefully push out the two socket clamps. Ease the memory module out of the socket to remove.

Testing the expanded memory

To verify that the memory modules are working properly, test them by printing a status page (see *Printing a Status Page on page 2-15*).

General Description of Options

Memory Card

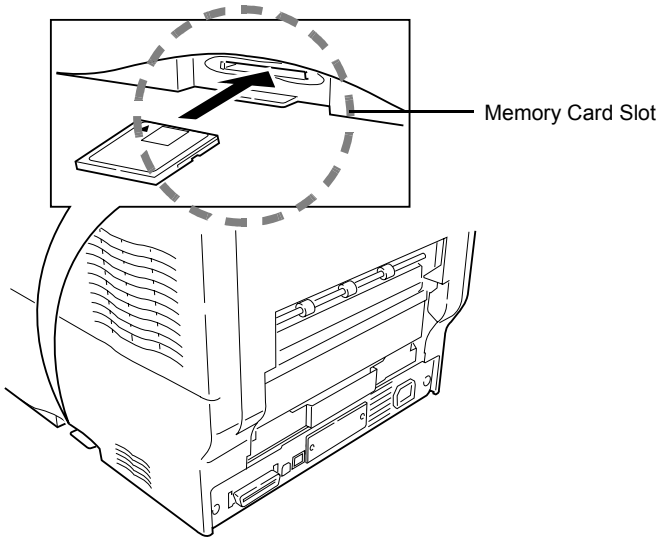
The printer is equipped with a slot for a memory card with the maximum size of 256MB. A memory card is useful for storing fonts, macros, and overlays. You can use the **IC Link for Windows** utility to download fonts, etc., to a flash memory card. This software is included in the CD-ROM supplied with the printer.

Reading Font from the Memory Card

Once inserted in the printer's slot, the contents of the memory card can be read from the control panel or automatically when you power on or reset the printer. To manually read data in the memory card, see *Using the Memory Card on page 2-51*.

NOTE: Before inserting a memory card in the printer, make sure that the printer is switched off.

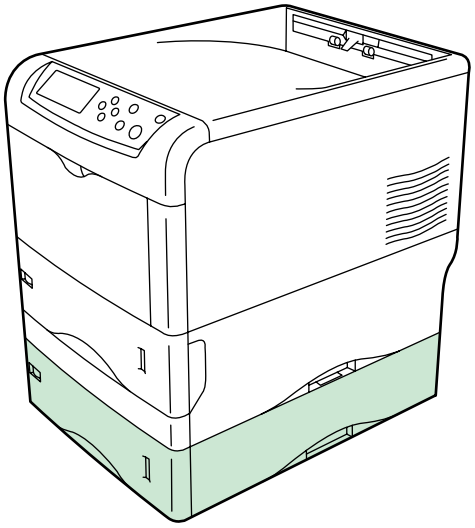
Insert the memory card in the memory card slot with the label side up.



PF-60 Paper Feeder

The PF-60 paper feeder allows you to add 3 more paper cassettes to the bottom of the printer for continuous feeding of a large volume of paper. Each paper cassette can hold up to approximately 500 sheets of ISO A4, ISO A5, JIS B5, letter, and legal size (80 g/m²) paper. This feeder is attached at the bottom of the printer as shown below.

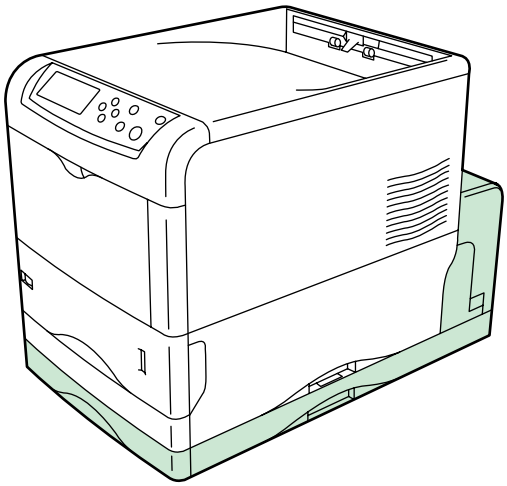
For detailed information on installing the paper feeder, see the manual supplied with the paper feeder.



DU-300/DU-301 Duplex Unit

The duplex unit is attached to the bottom of the printer and allows you to print onto both sides of the paper. Printing on both sides can be performed using ISO A4, ISO A5, JIS B5, letter, and legal sized paper.

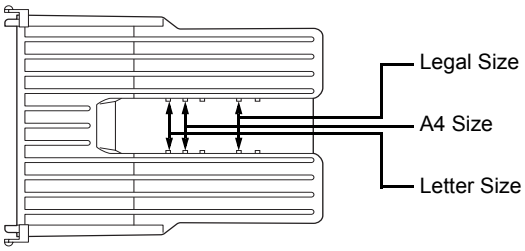
For detailed information on installing the duplex unit, see the manual supplied with the duplex unit.

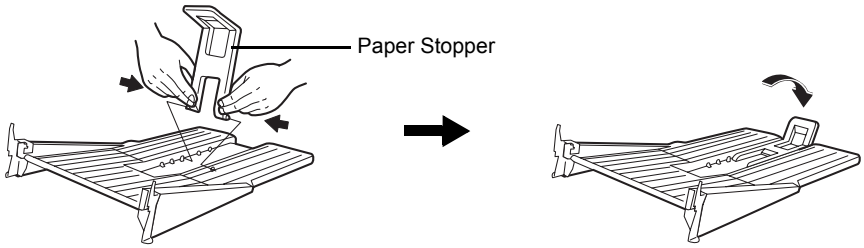


PT-300 Face-up Output Tray

Use the face-up output tray when you wish paper to be stacked with the printed side facing up (reverse order), or when you are printing on envelopes, postcards, transparencies, or thick paper. To install the face-up output tray, perform the following procedures:

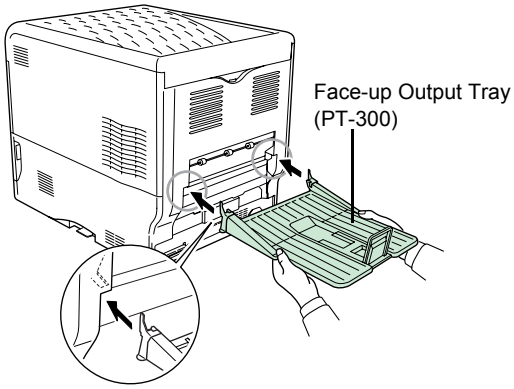
1 Install the paper stopper according to the size of paper to be used.



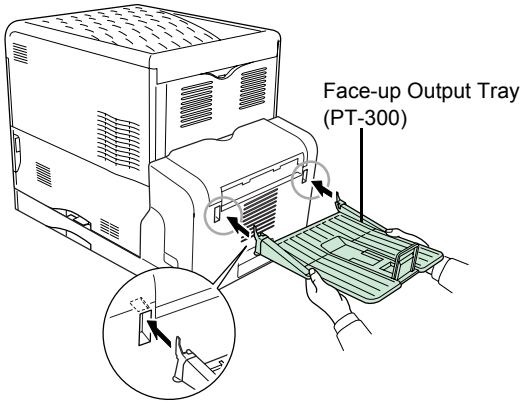


2 Install the face-up output tray on the rear of the printer or the duplexer.

When installing directly to the printer



If a duplexer has been installed to the printer

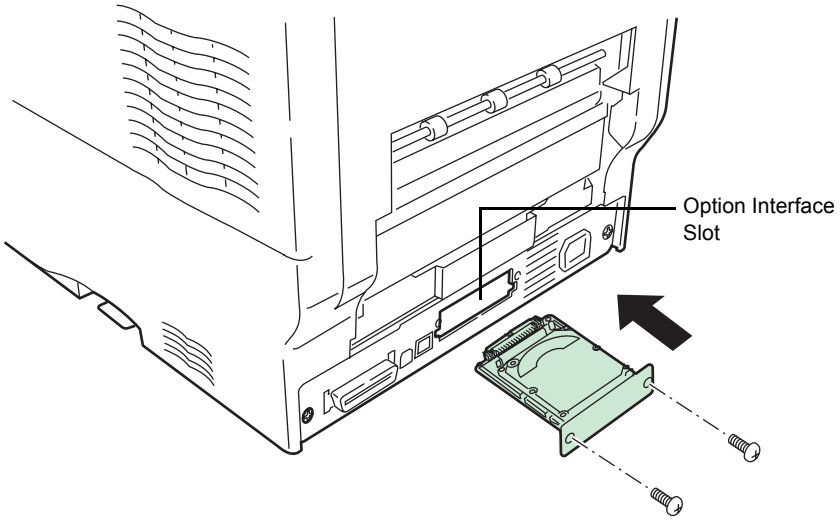


Hard Disk

The hard disk is used for saving print data. This is advantageous when printing multiple sets of copies, as high-speed printing is possible using the electronic sorting function. The hard disk is further required in order to use the e-MPS function. You can use the **Printer Disk Manager** utility to keep track of the stored data. This software is included in the CD-ROM supplied with the printer.

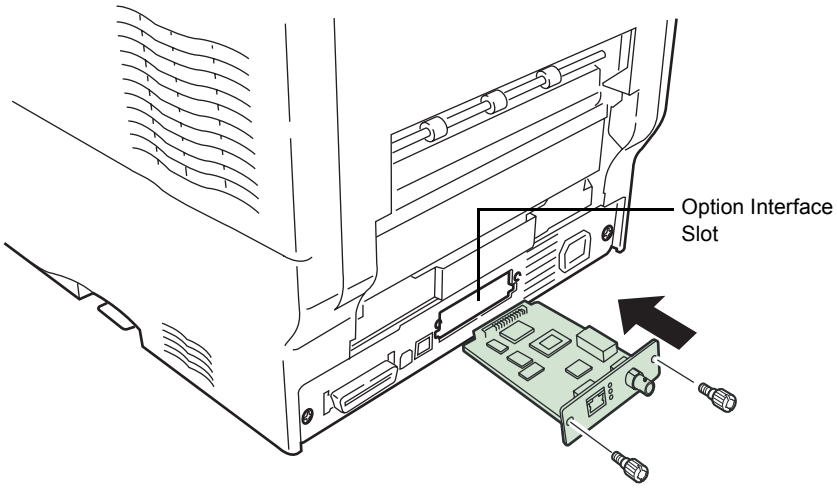
The hard disk must be installed in the option interface slot that is located at the back of the printer as shown below.

The hard disk must be formatted before the initial use. To format the hard disk, use the printer operator panel or the **Printer Disk Manager**.
Before you install the hard disk in the printer, power off the printer and unplug the power cord.



IB-20/IB-21E/IB-22 Network Interface Cards

Along with the standard for the network interface on the printer, the network interface card supports TCP/IP, IPX/SPX, NetBEUI and Appletalk protocols, so that the printer can be used on network environments including Windows, Macintosh, UNIX, NetWare, etc. The network interface card must be installed in the option interface slot that is located at the back of the printer as shown below.



Network interface card	Network connections
IB-20	10Base-T/100Base-TX/10Base-2
IB-21E	10Base-T/100Base-TX
IB-22	IEEE802.11b (Wireless)

4 Computer Interface

This chapter contains explanations on the following topics:

- General Information..... 4-2
- Parallel Interface 4-3
- USB Interface 4-5
- Serial Interface (Option) 4-6
- RS-232C Protocol 4-7
- RS-232C Cable Connection 4-10

General Information

This chapter explains the signals used in the printer's parallel, USB, and serial (option) interfaces. It also lists pin assignments, signal functions, timings, connector specifications, and voltage levels. For details on the network interface, refer to the IB-21E/IB-22 User's Manual contained on the CD-ROM that is supplied with the printer.

This chapter explains the following topics:

- Parallel Interface
- USB Interface
- Serial Interface (Option)

Parallel Interface

Communication Modes

The printer provides high-speed data transmission on a parallel interface. You can select the parallel interface communication mode from the operation panel. To change communication mode, see *Changing Parallel Interface Mode on page 2-29*.

NOTE: Use a parallel interface cable that complies with the IEEE 1284 standard.

You can choose from four communication modes:

Communication Mode	Reception	Transmission
Auto (default)	High-speed/ECP	Nibble/ECP
Nibble	High-speed	Nibble
High-speed	High-speed	—
Normal	Normal	—

Interface Signals

Table shows the connector pins and corresponding input and output signals of the parallel interface. Explanation of each signal is also given in the table.

The description in [ ] indicates signal names in Auto mode and Nibble (high) mode (IEEE 1284-compliant). In Auto and Nibble modes, these signals are bidirectional.

Pin	In or out	Signal	Description
1	In	Strobe† [nStrobe]	A negative-going-strobe pulse causes the printer to read and latch the data on the Data 0 [1] to Data 7 [8] signal lines.
2	In	Data 0 [Data 1]	These eight signals form one byte of data sent from host computer to printer. Data 7 [8] is the most significant bit.
3	In	Data 1 [Data 2]	
4	In	Data 2 [Data 3]	
5	In	Data 3 [Data 4]	
6	In	Data 4 [Data 5]	
7	In	Data 5 [Data 6]	
8	In	Data 6 [Data 7]	
9	In	Data 7 [Data 8]	

Pin	In or out	Signal	Description
10	Out	Acknowledge† [nAck]	This negative-going pulse acknowledges the previous character received.
11	Out	Busy [Busy]	When this signal is high, the printer is busy. When it is low, the printer is able to receive more data.
12	Out	Paper Empty [PError]	This signal goes high when the printer runs out of paper.††
13	Out	Online (Select) [Select]	This signal goes high when the printer is online and low when the printer is offline. The signal goes low when you press **[GO]** to make the printer go off line.††
14	In	— [nAutoFd]	Ignored
15	—	—	Not used
16	—	0 V DC	
17	—	Chassis Ground	
18	—	+5 V DC	This pin is used for the printer's +5 V DC power supply (+5±0.5 V, 400 mA maximum, with fuse)
19	—	Ground return	
20	—	Ground return	
21	—	Ground return	
22	—	Ground return	
23	—	Ground return	
24	—	Ground return	
25	—	Ground return	
26	—	Ground return	
27	—	Ground return	
28	—	Ground return	
29	—	Ground return	
30	—	Ground return	
31	In	— [nInit]	Ignored
32	Out	Error† [nFault]	When the high-speed parallel line control is on, this line returns an error status.††
33	—	—	Not used
34	—	—	Not used
35	Out	Power Ready	This signal goes high when the printer is powered on.
36	In	Select In [nSelect In]	When this line is high, IEEE1284 mode is enabled.

†. Indicates signals that are low active.

††.The Paper Empty, Online, and Error signals work only after you have enabled them using the O2 parameter of the FRPO command.

USB Interface

This printer supports the Hi-Speed USB. USB (Universal Serial Bus) interface specifications and interface signals are as follows.

Specifications

Basic specification

Complies with the Hi-Speed USB.

Connectors

Printer: B-type receptacle (female) with upstream port

Cable: B-type plug (male)

Cable

Use a shielded cable that complies with USB 2.0 (Hi-Speed USB) and not longer than 5 meters (16 feet).

Transfer Mode

High speed (480 Mbps maximum)

Power Control

Self-power device

Interface Signals

USB Connector Pin Assignment

Pin	Signal	Description
1	Vbus	Power supply (+5 V)
2	D-	Data transmission
3	D+	Data transmission
4	GND	Signal ground
Shell		Shield

Serial Interface (Option)

Installing the optional serial interface board kit (IB-11) in the printer enables connection to a computer with an RS-232C standard serial interface.

Interface Signals

The table below shows the pins and corresponding input and output signals of the RS-232C interface connector.

Pin	In or out	Signal	Description
1	—	FG	Frame Ground. This pin is connected directly to the printer frame.
2	Out	TXD	Transmit Data. This pin is used to output asynchronous data sent from the printer to the computer. This signal is often used in handshaking.
3	In	RXD	Receive Data. This pin is used to input serial asynchronous data sent from the computer to the printer.
4	Out	RTS	Request To Send. This output is always high (above 3 volts).
5	In	CTS	Clear To Send. Not used.
6	In	DSR	Data Set Ready. Not used.
7	—	SG	Signal Ground. This pin is used to establish a common reference level for the voltages of all signals other than Frame Ground.
20	Out	DTR	Data Terminal Ready. This pin is used to notify the status of the printer buffer (i.e., nearly full or nearly empty) when handshaking is used. The pin goes high (above 3 volts) when the buffer is able to accept more data.

Interface voltage levels

The voltage levels of the interface signals conform to EIA RS-232C specifications. The voltage level of SPACE is 3 to 15 volts. The voltage level of MARK is -3 to -15 volts. Voltages between -3 and 3 volts are undefined.

RS-232C Protocol

Parameters of the RS-232C Protocol

A protocol is a set of rules followed by various devices to send or receive data. The parameters of the RS-232C protocol are stored in the battery-powered memory of the printer. You can verify these parameters on the status printout as marked by the following identifications:

- H1: Baud rate
- H2: Number of data bits
- H3: Number of stop bits
- H4: Parity
- H5: Protocol logic
- H6: Buffer-nearly-full threshold
- H7: Buffer nearly-empty threshold
- H8: Received data buffer size

The parameters can be changed from the printer operator panel. To change the value for the serial interface parameters, see *Changing Serial Interface Parameters on page 2-30*.

This following section outlines the parameters and their values you can select on the operator panel:

H1: Baud rate

Parameter value	Baud rate
12	1200
24	2400
48	4800
96	9600
19	19200
38	38400
57	57600
11	115200

The factory setting is 96 (9600 baud).

H2: Number of data bits

7 or 8. The factory setting is 8.

H3: Number of stop bits

1 or 2. The factory setting is 1.

H4: Parity

Parameter value	Baud rate
0	None
1	Odd
2	Even
3	Ignored

The factory setting is 0 (none).

H5: Protocol logic

Parameter value	Baud rate
0	Combination of DTR (positive logic) and XON/XOFF
1	DTR (positive logic)
2	DTR (negative logic)
3	XON/XOFF
4	ETX/ACK

The factory setting is 0.

H6: Buffer nearly-full threshold

A percentage value from 0 to 99. The factory setting is 90.

H7: Buffer nearly-empty threshold

A percentage value from 0 to 99. The factory setting is 70. The factory settings of the buffer nearly-full and nearly-empty thresholds (H6 and H7) are subject to change without notice.

The difference between the nearly-full and nearly-empty thresholds allows the computer to send a fairly large amount of data in a continuous stream.

H8: Received data buffer size

The input buffer size is specified in increments which vary depending on the S5 parameter. When S5 is 0, the increment is 10KB. When S5 is 1, the increment is 100KB. When S5 is 2, the increment is 1024KB. The factory setting is 12 (1200KB, S5=1).

PRESCRIBE FRPO D0 Command

The PRESCRIBE FRPO D0 command is provided to allow manipulating XON/XOFF when an error has occurred on the serial interface. The following table summarizes the error status corresponding to different D0 values.

Timing of XON transfer to host while Ready or Waiting	Serial interface error	
	error not handled	error handled
XON sent every 3-5 seconds	D0=0 (default)	D0=1
XON not sent	D0=10	D0=11

RS-232C Cable Connection

Connecting the Printer to the Computer

Make sure that both computer and printer are powered off.

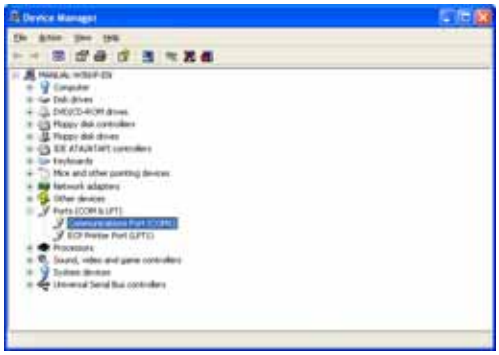
1. Discharge static electricity from your body by touching a metal object such as a doorknob.
2. Plug the end (printer side) of the RS-232C cable into the printer's serial interface connector and screw it on securely.
3. Plug the other end of the cable into the computer's serial interface connector.
4. Power on the printer.
5. The printer's parameters are set at the factory as follows:
   - Baud rate = 9600 bps, data bits (character length) = 8, stop bits = 1, parity = none
   - The two RS-232C protocols are XON/XOFF and DTR. The printer executes both of these protocols simultaneously, using positive logic for DTR.

   If you are not sure about the printer's current parameter settings, reset them to the values shown above (i.e., baud rate = 9600 bps, etc.). You can perform parameter settings from the operation panel. See *Changing Serial Interface Parameters on page 2-30*.
6. On the computer, set the same parameters as that of the printer. Most computers allow you to do this by DIP switch settings that should be made before power is turned on.

With Windows XP, make settings as follows:

1. Click on the **Start** button in the Windows XP task bar and align the cursor with **Settings**, then click on **Control Panel** from among the items displayed.
2. The **Control Panel** window opens. Double click on **System**.

3 **System Properties** window opens. Click on the **Hardware** tab, then click on the **Device Manager** button, and double click on **Ports (COM & LPT)**.



4 Double click on **Communications Port**.

5 The **Communications Port Properties** dialog is displayed for the selected COM port. Click on the **Port Settings** tab and set the port properties.

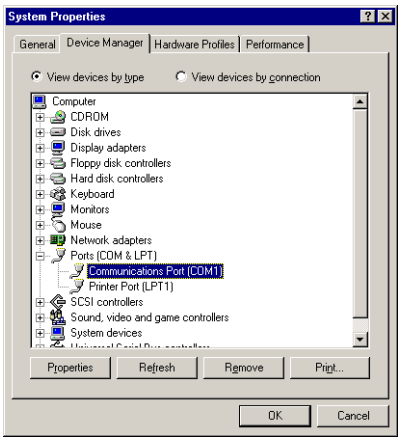
6 After setting the properties, click the **OK** button.

With Windows 95/98/Me, make settings as follows:

1 Click on the **Start** button in the Windows 95/98/Me task bar and align the cursor with **Settings**, then click on **Control Panel** from among the items displayed.

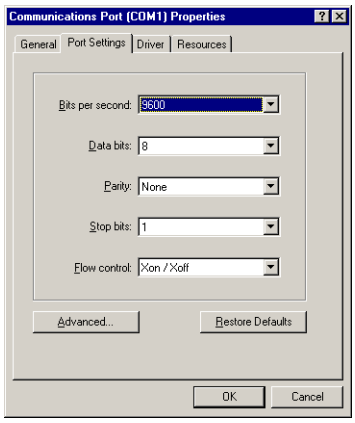
2 The **Control Panel** window opens. Double click on **System**.

3 **System Properties** window opens. Click on the **Device Manager** tab, then double click on **Ports (COM & LPT)**.



4 Double click on **Communications Port**.

5 The **Communications Port Properties** dialog is displayed for the selected COM port. Click on the **Port Settings** tab and set the port properties.



6 After setting the properties, click the **OK** button.

The software settings made using the above procedures are temporary. On most computers, permanent settings must be made with DIP switches.

Glossary

Additional memory — An additional memory (optional) is used for increasing the memory capacity of this machine. For DIMM that can be used in this machine, contact your service technician.

AppleTalk — AppleTalk offers file sharing and printer sharing and it also enables you to utilize application software that is on another computer on the same AppleTalk network.

Default Gateway — This indicates the device, such as a computer or router, that serves as the entrance/exit (gateway) for accessing computers outside of the network that you are on. When no specific gateway is designated for a destination IP address, data is sent to the host that is designated as the Default Gateway.

DHCP (Dynamic Host Configuration Protocol) — This is a protocol that automatically resolves the IP address, Subnet Mask and Gateway address on a TCP/IP network. Use of DHCP minimizes the load of network administration, especially on network environments with a large number of client computers where it is not specifically necessary to assign a separate IP address to each client, including printers.

dpi (dots per inch) — This indicates the number of dots printed per inch (25.4mm) as a unit for expressing resolution.

EcoPrint — This is a printing mode that reduces toner consumption. Pages printed in the EcoPrint mode are lighter than pages printed in the normal mode.

Emulation — This refers to emulation of other manufacturers' printers. The printer emulates operation of the following printers: PCL6 and KPDL.

Form Feed Timeout — While data is being sent to a printer, some pauses may occur. At this time, the printer waits for the next data without making a page break. Form feed timeout is a function to wait only a preset amount of time before it executes an automatic page break. After the waiting period begins, once the designated amount of time is exceeded, the printer will automatically process the currently received data and print it out. If the machine has received no print data for the last page, the printer ends processing of that job without outputting paper.

IEEE1284 — This is a standard used when connecting a printer to a computer, and was established by the Institute of Electrical and Electronic Engineers in 1994.

IP Address (Internet Protocol Address) — The Internet Protocol address is a unique number that represents a specific computer in a network. The format of an IP Address is four numbers separated by dots, e.g. 192.168.110.171. Each number should be a decimal between 0 and 255.

KPDL — KPDL is Kyocera's implementation of the PostScript page description language Level3.

MP tray	This tray is used instead of the cassette when printing on envelopes, postcards, transparency sheets, and labels.
NetBEUI (NetBIOS Extended User Interface)	An enhanced version of the NetBIOS protocol, it enables the utilization of more advanced functions on small-scale networks than do other protocols such as TCP/IP, etc.
Outline font	With outline fonts, character outlines are represented with numerical expressions and fonts can be enlarged or reduced in different ways by changing the numeric values of those expressions. Printing remains clear even if you enlarge fonts, since the characters are defined with outlines represented with numerical expressions. You can specify the font size in steps of 0.25 points up to 999.75 points.
Parallel interface	With this interface, data transfer between the printer and the computer takes place in 8-bit chunks. The printer can perform IEEE1284 compatible bi-directional communications.
PostScript	This is a page description language developed by Adobe Systems, Inc. It enables flexible font functions and highly-functional graphics, allowing higher quality printing.
PPM (prints per minute)	This indicates the number of A4 size printouts made in one minute.
Printer driver	The printer driver makes it possible for you to print data created using application software. The printer driver for the printer is contained on the CD-ROM supplied with the printer. Install the printer driver on the computer connected to the printer.
Sleep mode	This mode is provided to save power. It is activated when the machine is not used for a preset period of time. In this mode, power is reduced to the minimum. The default time period is 15 minutes. The default setting can be changed.
Status page	This lists machine conditions, such as the machine's memory, the total number of prints and paper source settings. You can print the status page from the operation panel.
Subnet Mask	This is a 32-bit numerical value that defines which bits of the IP address specify the network address and which specify the host address.
TCP/IP (Transmission Control Protocol/Internet Protocol)	TCP/IP is a suite of protocols designed to define the way computers and other devices communicate with each other over a network.
USB (Universal Serial Bus)	An interface standard for low to middle speed serial interfaces. This printer supports Hi-Speed USB. The maximum transfer rate is 480 Mbps and the maximum cable length is 5 meters (16 feet).

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QUALITY
CERTIFICATE
This machine has passed
all quality controls and
final inspection.

A1

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